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United States
Department of
Agriculture

Soil
Conservation
Service

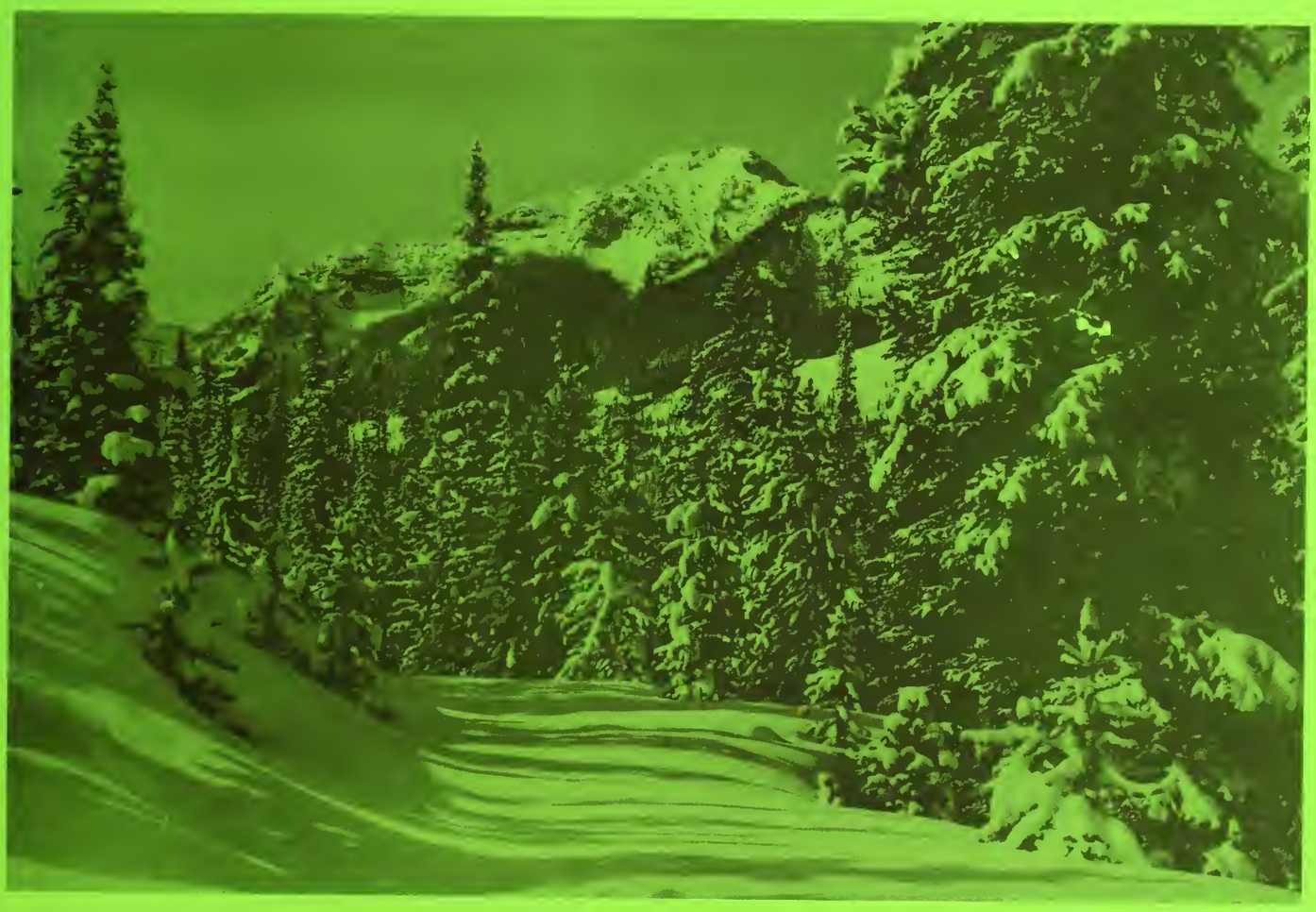
Spokane,
Washington

Water Supply Outlook for Washington

as of FEBRUARY 1, 1983

in cooperation with

Department of Ecology
State of Washington



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TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: Fresh powder snow on Elephant Mountain, near the West Fork of Hyalite Creek, in Montana.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

PETER C. MYERS
Chief
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WASHINGTON D.C.

Released by

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SPOKANE, WASHINGTON

In Cooperation with

DONALD W. MOOS
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STATE OF WASHINGTON

Report prepared by

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SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

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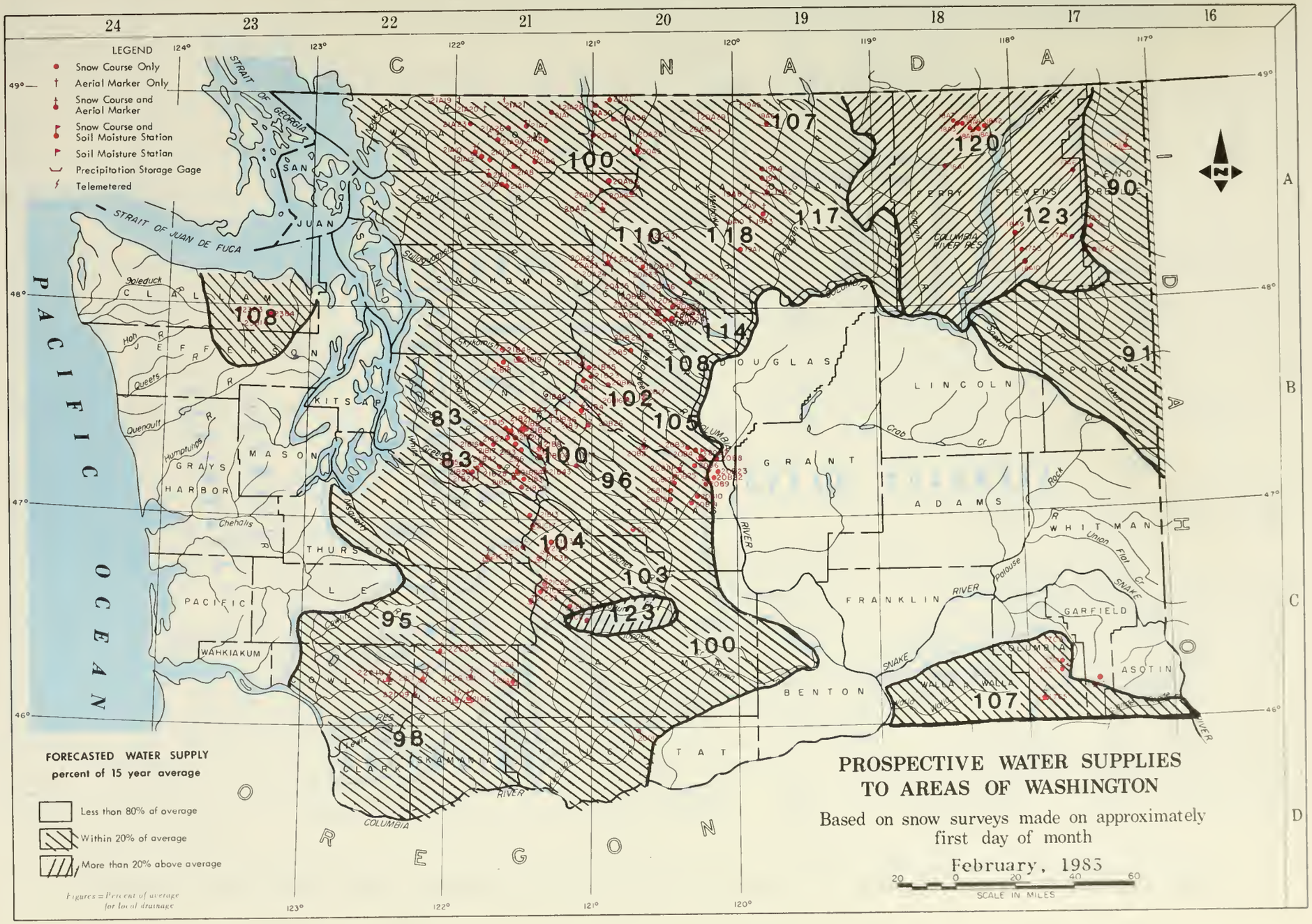


INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Cheweloh	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2SP	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Tauts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5SP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Mirror Lake	20A39	30	31N	18E	5600
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2SP	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1SP	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough #2	20B25SP	10	20N	20E	5310
Colockum Creek					
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Visto	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Colockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20B11SP	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17SP	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Touchet No. 2	17C5SP	6	7N	40E	5530
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lone Pine Shelter	21C26SP	8	9N	7E	3800
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	3280

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16P	31	22N	9E	2500
Mt. Washington	21B15P	8	22N	9E	3000
Rex River	21B17P	11	21N	9E	2400
South Fork Cedar	21B6P	24	21N	10E	3000
Tinkham Creek	21B20P	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21B18P	26	26N	9E	1900
Olallie Meadows East	21B55SP	20	22N	11E	8700
Skykomish River					
Lake Elizabeth	21B19P	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Morten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

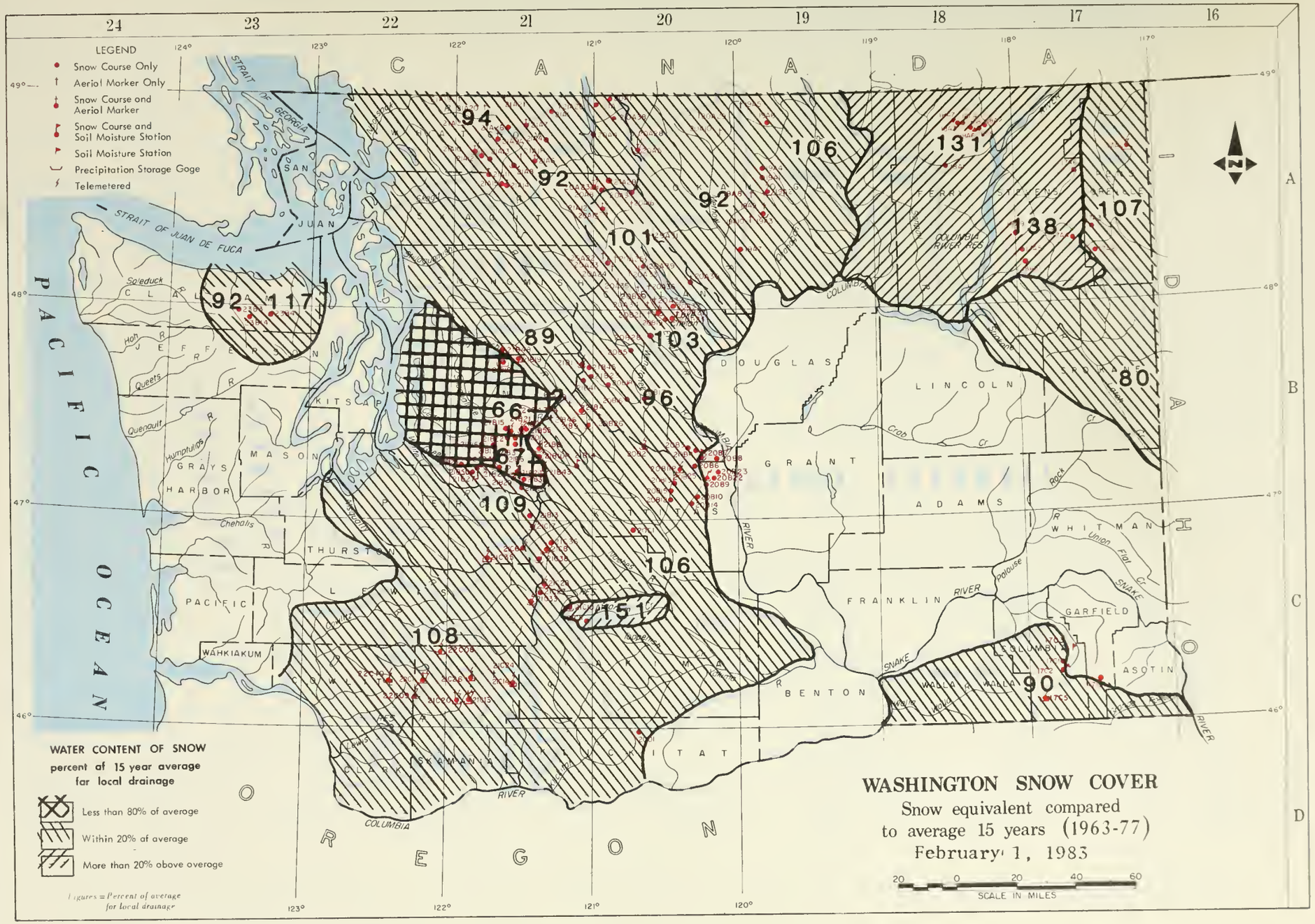
OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

USDA SCS PORTLAND, OR 1979 M7-OL-22026C



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UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP	RANGE	ELEV
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	1 A1SP	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2 SP	33	37N	24E	4500
Starvation Min.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5SP	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12SP	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9SP	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Mirror Lake	20A39	30	31N	18E	5600
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32c	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2 SP	35	22N	17E	4270
Chiwaukum G. S.	20B1C	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B1B	4	26N	16E	2140
Stevens Pass	21B15P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	19E	3700
Trough 2	20B25SP	10	20N	20E	5310
Colockum Creek					
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Visto	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Colockum Pass	2089	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20B11SP	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17SP	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8P	13	21N	11E	2450
Von Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20B15	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Mortin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Touchet No. 2	17C5SP	6	7N	40E	5530
Klickitot River					
Satus Pass	20D1	21	6N	17E	4030
Lewis River					
Lone Pine Shelter	21C26SP	8	9N	7E	3800
Marble Mountain	22C09SP	26	8N	5E	3200
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Coyuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Ryan Lake	22C08SP	9	10N	6E	3280
Sheep Canyon	22C10SP	12	8N	4E	4920

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV
Nisqually River					
Paradise Park (New)	21C35 SP	13	15N	8E	5500
White River					
Corral Pass	21813 SP	30	18N	11E	6000
Green River					
Airstrip	21824P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21842SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	2185C	22	20N	8E	4000
Sawmill Ridge	21831	5	19N	11E	4700
Snowshoe Butte	21843SP	14	20N	11E	5000
Stampede Pass	21B10 SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16P	31	22N	9E	2500
Mt. Washington	21B15P	8	22N	9E	3000
Rex River	21B17P	11	21N	9E	2400
South Fork Cedar	21B6P	24	21N	10E	3000
Tinkham Creek	21820P	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21848	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21B18P	26	26N	9E	1900
Olallie Meadows East	21855SP	20	22N	11E	8700
Skykomish River					
Lake Elizabeth	21B19P	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Morten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AF	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP	RANGE	ELEV
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

February 1, 1983

Near normal water supplies are forecast for most Washington water users this coming spring and summer. The mountain snowpack ranges from slightly below average to above average with a few exceptions. It is below average on the Spokane River and much below normal on the Green and Snoqualmie Rivers. Precipitation has been near normal to slightly above during the November-January period. Reservoir storage is very good for February 1.

SNOW COVER

The snowpack in Eastern Washington is average to above average on most watersheds. It is about 95-100% of normal on the Chelan and Wenatchee Rivers and is 90% in the Blue Mountains of Southeast Washington. The Spokane River snowpack is 80% of average. Western Washington snowpack is near average in the Olympics and on the Cowlitz, Baker, and Skagit Rivers. The Snoqualmie and Green Rivers have a snowcover about two thirds the usual amount. This is due to the warm temperatures in December and January which caused rain and melting at the higher elevation and subsequent early runoff.

PRECIPITATION

Precipitation during the November-January winter period has been close to average over most of the state. The northeastern counties have received precipitation amounts near 120% to 130% of average. Precipitation on the Columbia in Canada has been 80% of average. January precipitation was near average west of the Cascades. It was 115% to 150% east of the Cascades except for Southeast Washington where it was 80% of normal.

RESERVOIR STORAGE

Stored water supplies are generally very good for February 1. Most reservoirs are storing near average to above average amounts for this time of year. The Yakima Irrigation reservoirs are storing 715,800 acre-feet of water compared to the February 1 average of 656,500 acre-feet, or 109%. Lake Chelan is 100% of normal and Banks reservoir is currently 114% of average.

STREAMFLOW

River flows during January were generally above average due to warm temperatures and near average precipitation. Forecasts of prospective spring and summer streamflow are within 20% of average over most of the state. Exceptions are the Colville River and the Kettle Rivers which are forecast to flow at 123% and 120%, respectively.

STREAMFLOW FORECASTS - FEBRUARY, 1983

The following summarized runoff forecasts are based principally on mountain snowcover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1982 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1983	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Forecast period	1982	1981	1980	15-Yr. Average 63-77
		COLUMBIA BASIN					
COLUMBIA RIVER SYSTEM							
Columbia River	43900	96	Apr-Sept		48531	40810	45510
at Birchbank 1/	35100	97	Apr-July		38501	34081	36358
	25411	97	Apr-June		27002	27618	26197
Columbia River	66000	97	Apr-Sept		70303	61016	68026
at Grand Coulee 1/	55300	97	Apr-July		58525	52320	57050
	42952	97	Apr-June		44235	43871	44280
Columbia River	73500	99	Apr-Sept		77308	66512	73911
bl. Rock Island Dam 1/	62100	99	Apr-July		64689	57767	62444
	47994	99	Apr-June		49348	48667	48479
Columbia River	101000	98	Apr-Sept		96188	91737	103477
at The Dalles, OR 1/	86000	97	Apr-July		81125	79919	88503
	69082	97	Apr-June		63521	68304	71219
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	14100	90	Apr-Sept		13896	13271	15643
bl. Box Canyon	12900	90	Apr-July		13179	12116	14334
	11049	90	Apr-June		11594	10776	12277
KETTLE RIVER SYSTEM							
Kettle River	2210	120	Apr-Sept		2184	1835	1845
nr. Laurier	2117	121	Apr-July		2013	1747	1753
	1939	122	Apr-June		1657	1603	1587
Colville River	165	123	Apr-Sept		125	116	134
at Kettle Falls	154	125	Apr-July		111	105	123
	146	127	Apr-June		94	97	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	Seasonal Streamflow in Thousands of Acre-Feet 1982	1981	1980	15-yr. Average 63-77
SPOKANE RIVER SYSTEM **							
Spokane River	2650	91	Apr-Sept		2238	2214	2910
at Post Falls, ID 2/	2550	91	Apr-July		2145	2046	2733
	2392	92	Apr-June		1960	1904	2600
OKANOGAN RIVER SYSTEM							
Similkameen River	1630	107	Apr-Sept		1241	1479	1517
nr. Nighthawk	1520	107	Apr-July		1118	1391	1417
	1275	107	Apr-June		930	1247	1192
Okanogan River	2012	117	Apr-Sept		1631	1551	1718
nr. Tonasket	1806	116	Apr-July		1416	1423	1564
	1564	120	Apr-June		1107	1240	1304
METHOW RIVER SYSTEM							
Methow River	1190	118	Apr-Sept		786	996	1011
nr. Pateros	1100	117	Apr-July		724	934	937
	925	117	Apr-June		602	811	791
CHELAN RIVER SYSTEM							
Chelan River	1407	114	Apr-Sept		916	1120	1238
at Chelan 3/	1231	114	Apr-July		798	1020	1080
	950	114	Apr-June		621	859	834
Stehekin River	973	110	Apr-Sept		662		883
at Stehekin	851	114	Apr-July		543		744
	634	114	Apr-June		403		557
Entiat River	261	108	Apr-Sept		186	216	241
nr. Ardenvoir	239	110	Apr-July		168	200	218
	191	110	Apr-June		137	172	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	1361	105	Apr-Sept				1297
at Plain	1213	105	Apr-July				1156
	948	105	Apr-June				903
Wenatchee River	1720	97	Apr-Sept		1188	1516	1767
at Peshastin	1540	97	Apr-July		1075	1399	1586
	1212	97	Apr-June		869	1208	1250
Stemilt Basin nr. Wenatchee	136*	95	May-Sept				138*
Icicle Creek	379	102	Apr-Sept				371
nr. Leavenworth	359	105	Apr-July				342
	302	108	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by Jerry Beard, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
YAKIMA RIVER SYSTEM							
Yakima River	142	99	Apr-Sept		95	115	144
nr. Martin 4/	129	97	Apr-July		82	103	133
	113	99	Apr-June		73	95	114
Yakima River	938	96	Apr-Sept		700	792	975
at Cle Elum 5/	880	100	Apr-July		643	716	882
	763	102	Apr-June		563	646	750
Yakima River	2168	100	Apr-Sept		1194	1833	2168
nr. Parker 6/	1993	102	Apr-July		1059	1733	1954
	1727	102	Apr-June		961	1610	1693
Kachess River	126	100	Apr-Sept		81	111	126
nr. Easton 7/	116	98	Apr-July		72	105	119
	104	101	Apr-June		66	91	103
Cle Elum River	482	101	Apr-Sept		313	-	479
nr. Roslyn 8/	441	101	Apr-July		282	350	435
	373	104	Apr-June		244	314	358
Bumping River	152	104	Apr-Sept		78	129	146
nr. Nile 9/	149	109	Apr-July		70	120	132
	115	108	Apr-June		63	111	106
American River	136	107	Apr-Sept	140	63	121	127
nr. Nile	125	107	Apr-July	130	58	105	116
	102	108	Apr-June	109	51	114	95
Tieton River	277	110	Apr-Sept		148	224	252
at Tieton Dam 10/	232	110	Apr-July		131	192	212
	186	111	Apr-June		108	166	168
Naches River	920	103	Apr-Sept		419	729	893
nr. Naches 11/	880	109	Apr-July		380	694	806
	739	109	Apr-June		339	638	678
Ahtanum Creek	58	123	Apr-Sept				47
nr. Tampico 12/	52	125	Apr-July				42
	47	128	Apr-June				37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr.	Fore cast	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	18.7	107	Apr-Sept	24.62		11.65	17.50
at Walla Walla	18.6	107	Apr-July	24.48		11.64	17.33
	18.4	107	Apr-June	21.63		11.64	17.15
Lewis River	1272	98	Apr-Sept		1096	1001	1298
at Ariel 13/	1105	98	Apr-July		971	883	1128
	972	98	Apr-June		865	798	992
Cowlitz River	2020	95	Apr-Sept			1626	2126
bl. Mayfield Dam	1760	95	Apr-July			1432	1854
	1475	95	Apr-June			1275	1553
Cowlitz River	2740	99	Apr-Sept		2390	1976	2766
at Castle Rock	2380	90	Apr-July		2125	1852	2401
	1867	92	Apr-June		1875	1649	2029
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	172	108	Apr-Sept				160
nr. Sequim	146	113	Apr-July				130
	108	113	Apr-June				96
ELWHA RIVER SYSTEM							
Elwha River	553	100	Apr-Sept				553
nr. Port Angeles	454	100	Apr-July				454
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	2540	100	Feb-Aug				2532
at Newhalem 15/	2172	92	Apr-Sept				2356
	1963	100	Apr-July				1972
	1530	103	Apr-June				1485
GREEN RIVER SYSTEM							
Green River	262	83	Apr-Sept				316
bl. Howard Hanson Dam 16/	238	84	Apr-July				284
	216	84	Apr-June				256
CEDAR RIVER SYSTEM							
Cedar River	77	83	Apr-Sept				93
nr. Cedar Falls							

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about February 1, 1983 as percent of the same date in 1982 and 1981 and average of record.

Tributary Basin	No. of Courses Average	1983 Snow Water Expressed as percent of 1982	1981	1963-77 Avg.
		UPPER COLUMBIA BASIN		
Pend Oreille	9	105	214	107
Kettle	8	116	242	131
Colville	1	121	245	138
Spokane	5	83	1033	80
Okanogan	20	101	286	106
Methow	1	104	166	92
Chelan	5	87	210	101
Entiat	11	109	197	103
Wenatchee	9	86	609	96
Yakima	14	101	569	106
Ahtanum	2	143	494	151
		LOWER COLUMBIA BASIN		
Mill Creek	1	69	272	90
Cowlitz	2	101	530	108
		PUGET SOUND		
White	1	119	409	109
Green	6	53	342	62
Snoqualmie	1	54	719	66
Skykomish	2	83	666	89
Skagit	15	98	1358	92
Baker	8	-	581	94
		OLYMPIC PENINSULA		
Morse	1	93	1313	104
Elwha	1	99	2157	92
Dungeness	1	96	2225	117

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (February) 1983	1982	1982	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	168.5	72.2	180.0	145.3
Columbia	Franklin D. Roosevelt Lake	5232.0	5177.2	4961.6	4726.9	3698.2
Columbia	Banks Lake	714.9	709.6	704.2	120.8	619.4
Okanogan	Conconully Reservoir	13.0	11.5	9.1	6.8	6.2
Okanogan	Conconully Lake	10.5	10.4	8.9	10.4	7.6
Chelan	Lake Chelan	676.1	295.1	319.9	481.3	294.2
		YAKIMA				
Yakima	Keechelus Lake	157.8	87.3	82.1	113.8	97.6
Kachess	Kachess Lake	239.0	199.8	148.0	179.2	173.4
Cle Elum	Lake Cle Elum	436.9	284.7	57.6	220.9	259.7
Bumping	Bumping Lake	33.7	6.2	4.0	17.0	7.8
Tieton	Rimrock Lake	198.0	137.8	116.1	170.5	118.0
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	1045.1	942.9	1293.9	1012.6
Skagit	Diablo Reservoir	90.6	83.5	84.0	87.6	84.2
Skagit	Gorge Reservoir	9.8	8.0	7.9	7.9	7.9

1/ Based on Active Storage

* 15-yr. Average 1963-1977

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct Observed	1982 2/ Departure	WINTER Nov. 1982 - Jan. 1983 Observed	2/ Departure
Columbia in Canada	5.40	+0.38	8.79	-2.34
Pend Oreille - Spokane	4.85	+0.81	11.91	-0.27
Northeastern Washington	2.73	+0.25	8.67	+1.96
Southeastern Washington	4.19	+1.68	6.26	-0.80
East Slope Cascades	6.27	+1.52	22.49	+2.46
North Central Washington	2.35	+0.76	5.65	+0.81
Northwest Slope Cascades	12.32	-0.89	35.42	-2.51
Southwest Slope Cascades	10.16	+1.48	29.12	+0.21

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages.
East Slope Cascades	- Yakima, Wenatchee and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

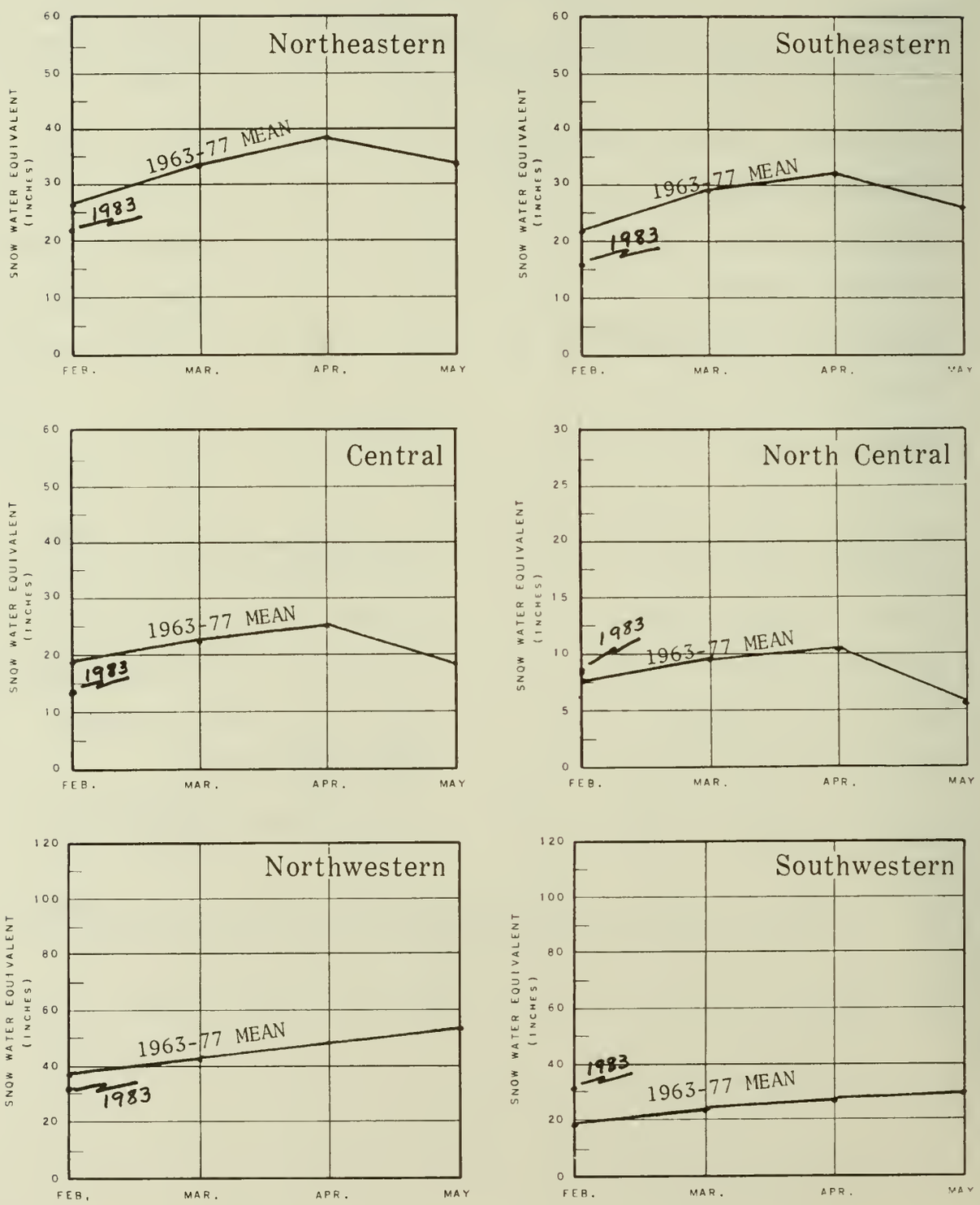
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1983

DRAINAGE AREAS



Average ———
1983 - - - - - -

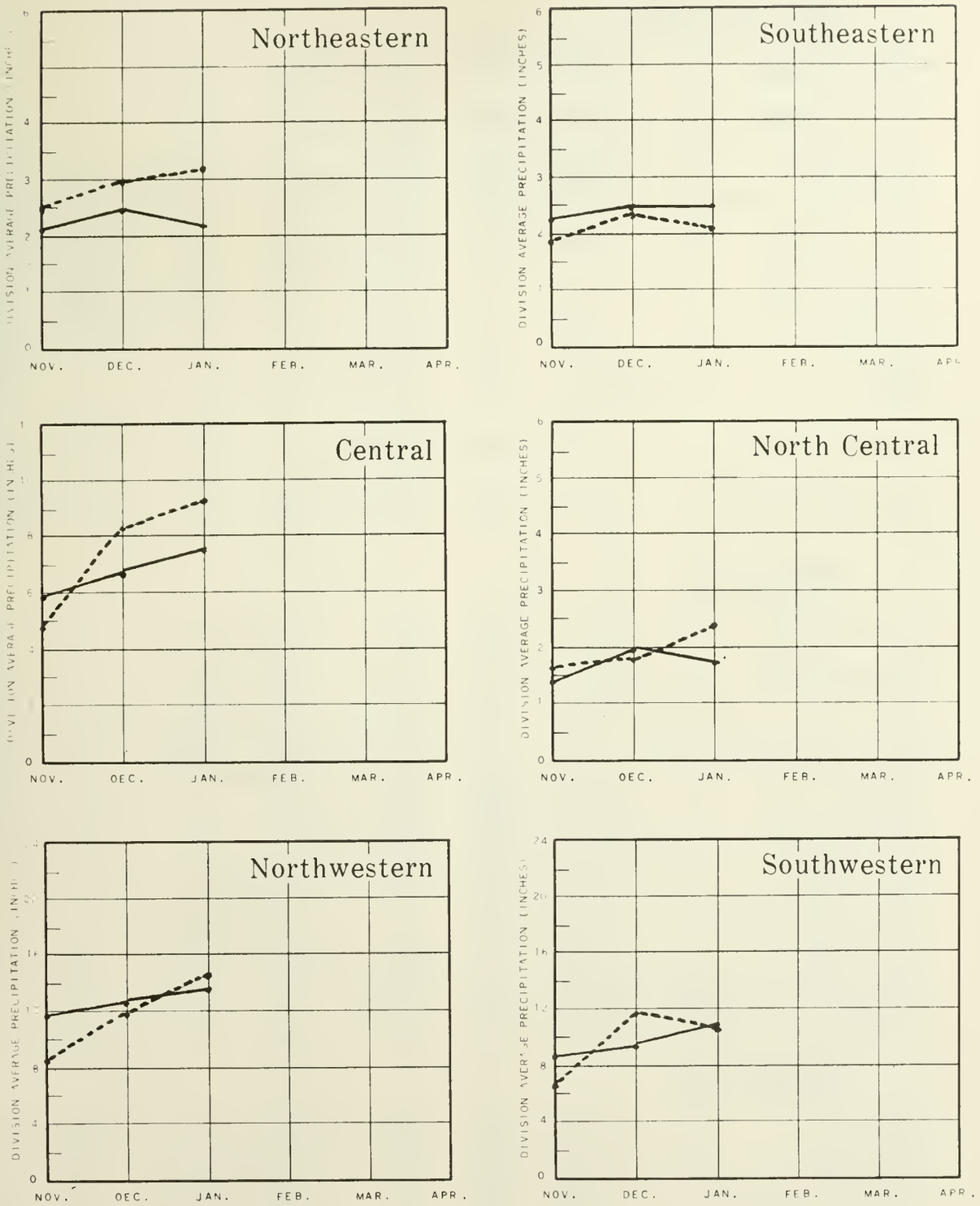
Selected Snow Survey Courses by Soil Conservation Service

M7-L-22028G

WASHINGTON VALLEY PRECIPITATION

1983

DRAINAGE AREAS



Average ———
1983 - - - - - -

Preliminary Analysis by National Weather Service

SNOW DATA TO FEBRUARY 1, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Benton Meadow	16A02	2344	12/29	17	3.9	1.2	2.7
			1/28	16	4.9	5.9	5.2
Benton Spring	16A03	4900	12/29	40	10.4	5.9	7.5
			1/28	49	16.2	12.1	13.2
Chewelah	17A04	4925	2/1	Discontinued		10.0	11.5
Heart Lake Trail	14C10	4800	12/30	31	7.6	-	9.7
			1/28	39	12.5	16.3	12.8
Hoodoo Basin	15C10	6000	12/30	70	21.2	24.6	22.2
			1/28	89	33.7	37.2	36.3
Hoodoo Creek	15C01	5900	12/30	66	18.8	-	19.8
			1/28	84	31.2	33.0	32.5
Lookout	15B02	5250	12/30	60	16.8	12.2	13.8
			1/31	67	22.0	21.8	25.4
Nelson	2D04-Can	3050	12/30	37	7.4	4.2	7.2*
			1/31	51	14.0	12.7	11.0*
Schweitzer Bowl	16A06	4500	12/28	65	18.6	13.8	13.8
			2/1	77	28.0	21.8	23.1
Schweitzer Ridge	16A05	6100	12/28	79	26.3	18.0	21.3
			2/1	100	40.0	31.5	34.2
KETTLE RIVER							
Barnes Creek	2B06-Can	5300	1/1	Not Measured		5.7	8.1*
			2/1	Late Report		15.3	13.4*
Big White Mtn.	2E03-Can	5500	1/1	Not Measured		-	4.4*
			1/30	57	16.0	14.5	13.5*
Butte Creek	18A03	4070	1/1	Not Measured		3.4	4.0
			1/29	30	8.1	7.0	6.9
Cabin Creek	18A08	3170	2/1	Discontinued		6.8	6.0
Carmi	2E02-Can	4100	1/30	28	6.5	5.5	5.0*
Farron # 1	2B02-Can	4000	1/28	45	13.6	11.4	9.4*
Farron # 2	2B02A-Can	4000	1/28	44	13.6	11.3	8.4*
Goat Creek	18A04	3595	2/1	Discontinued		6.2	5.4
Monashee Pass	2E01-Can	4500	2/1	Late Report		11.3	9.4*
Snow Caps Creek	18A05	2150	2/1	Discontinued		5.8	4.1
Snow Caps Trail	18A06	2720	2/1	Discontinued		5.0	4.8
Summit G.S.	18A07	4600	1/29	25	7.0	5.6	5.9
Trapping Creek Lower	2E05-Can	3050	1/29	24	5.4	4.7	4.2*
Trapping Creek Upper	2E04-Can	4450	1/29	34	9.0	8.5	7.1*
COLVILLE RIVER							
Baird	17A06	3215	1/29	28	7.6	6.3	5.5
Carlson	18A09	2885	2/1	Discontinued		4.2	3.7
Chewelah	17A04	4925	2/1	Discontinued		10.0	11.5
Stranger Mountain	17A05	5990	2/1	Discontinued		7.9	10.0
Togo	18A10	3370	2/1	Discontinued		7.2	8.6

*Average for years of Record
#Average based on 1963-1977 Average

SNOW DATA TO FEBRUARY 1, 1983 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #
SPOKANE RIVER							
Above Burke	15B08	4100	12/29	35	7.8	5.2	9.3
			1/31	40	12.5	14.2	16.4
4th of July Summit	16B03	3100	12/30	23	4.3	-	3.3
			1/28	21	7.0	8.5	7.3
Lookout	15B02	5250	12/30	60	16.8	12.2	13.8
			1/31	67	22.0	21.8	25.4
Mosquito Ridge	16A04	5110	1/27	87	30.4	21.2	24.5
Sherwin	16C01	3200	12/29	20	4.4	5.2	5.5
			1/28	23	6.5	13.2	10.7
Sunset	15B09A	5600	1/26	63	21.8	23.5	27.4
NEWMAN LAKE							
Ragged Ridge	17B02	3333	1/3	30	5.0	1.0	New
			2/1	Late Report		5.6	New
OKANOGAN RIVER							
Aberdeen Lake	1F01A-Can	4300	1/31	26	6.0	6.3	5.0*
Blackwall Peak	2G03-Can	6250	12/29	43	11.7	10.8	15.1*
			2/1	69	22.9	25.4	24.0*
Brenda Mine	2F18-Can	4800	12/29	26	5.6	4.3	6.3*
			1/28	38	9.7	8.9	9.4*
Brookmere	1C01-Can	3200	12/31	19	3.1	4.4	3.7*
			1/31	22	5.3	8.1	7.0*
Enderby	1F04-Can	6250	12/29	67	19.8	17.8	18.1*
			1/27	85	28.1	32.5	25.0*
Esperon Creek Lower	2F15-Can	4400	2/1	Not Measured		-	7.8*
Esperon Creek Middle	2F14-Can	4700	2/1	Not Measured		-	10.2*
Esperon Creek Upper	2F13-Can	5400	2/1	Not Measured		-	10.6*
Grayback Reservoir	2F08-Can	5225	1/26	31	7.7	6.1	6.2*
Hamilton Hill	2G06-Can	4900	1/28	38	10.2	11.3	10.4*
Harts Pass	20A05A	6500	1/28	102	31.3	30.0	34.2
Horseshoe Basin	19A05a	7000	2/1	Discontinued		17.8	12.8
Isintok Lake	2F11-Can	6300	12/27	16	2.8	1.6	3.7*
			1/30	24	5.5	6.0	5.9*
Lost Horse Mountain	2G04-Can	6300	1/31	29	6.9	-	6.7*
Loup Loup	19A07	4650	2/1	Discontinued		8.1	7.4
McCulloch	2F03-Can	4200	1/1	20	4.5	1.6	3.1*
			1/31	26	5.9	3.6	4.9*
Missezula Mtn.	2G05-Can	5100	1/30	26	5.9	7.0	6.7*
Mission Creek	2F05-Can	6000	12/30	35	9.2	5.7	8.4*
			1/31	51	15.1	13.9	13.2*
Monashee Pass	2E01-Can	4500	2/1	Late Report		11.3	9.4*
Mount Kobau	2F12-Can	5950	12/28	28	6.3	7.5	3.9*
			1/30	43	10.9	11.1	8.7*
Muckamuck	19A09a	6390	2/1	Discontinued		16.7	11.4

Average for years of record
* Average based on 1963-1977 Average

SNOW DATA TO FEBRUARY 1, 1983 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
OKANOGAN RIVER (Cont.)							
Mutton Creek No. 1	19A01	5700	2/1	Not Measured		14.2	10.8
Mutton Creek No. 2SP	19A11	6000	2/1	Not Measured		6.6	New
Nickel Plate	2G02-Can	6200	2/1	Not Measured		-	4.2*
Oyama Lake	2F19-Can	4400	1/31	25	7.1	6.0	5.1*
Paysayten	20A28	4300	2/1	Discontinued		14.6	14.5
Postill Lake	2F07-Can	4500	1/31	28	6.6	6.0	5.8*
Rusty Creek	19A03	4000	2/1	Not Measured		6.0	5.6
Salmon Meadows	19A02	4500	2/1	Not Measured		8.1	7.5
Silver Star Mountain	2F10-Can	6050	12/27	48	14.4	11.1	13.7*
			2/1	66	22.0	23.1	18.9*
Starvation Mountain	19A10	6750	2/1	Discontinued		17.8	13.8
Summerland Reservoir	2F02-Can	4200	12/30	20	4.3	2.6	4.6*
			1/29	30	7.5	7.2	7.4*
Sunday Summit	2G01A-Can	4300	1/29	19	3.9	7.5	5.1*
Touts Coulee	19A06	2845	2/1	Discontinued		3.0	3.1
Trout Creek	2F01-Can	4700	1/31	25	6.5	5.8	5.3*
Vaseux Creek	2F20-Can	4600	12/30	17	1.8	2.4	2.6*
			1/28	26	6.1	4.1	4.4*
White Rocks Mtn.	2F09-Can	6000	12/29	37	10.6	9.8	9.6*
			2/1	53	15.7	17.7	16.7*
METHOW RIVER							
Billy Goat Pass	20A10	6409	2/1	Discontinued		-	24.2
Dollar Watch	20A29	7000	2/1	Discontinued		-	20.3
Harts Pass	20A05A	6500	1/28	102	31.3	30.0	34.2
Horseshoe Basin	19A05	7000	2/1	Discontinued		17.8	12.8
Loup Loup	19A07	4650	2/1	Discontinued		8.1	7.4
Mutton Creek No. 1	19A01	5700	2/1	Not Measured		14.2	10.8
Mutton Creek No. 2SP	19A11	6000	2/1	Not Measured		6.6	New
Rusty Creek	19A03	4000	2/1	Not Measured		6.0	5.6
Salmon Meadows	19A02	4500	2/1	Not Measured		8.1	7.5
War Creek Pass	20A31	6500	2/1	Discontinued		-	36.2
CHELAN LAKE BASIN							
Cloudy Pass +	20A22	6500	2/1	Not Measured		-	30.0
Lyman Lake	20A23	5900	1/28	141	47.3	49.9	39.8
Little Meadows	20A23	5900	1/28	103	30.9	39.7	30.5
Mirror Lake	20A39	5600	1/28	84	26.8	35.0	New
Park Creek Ridge	20A12	4600	1/28	103	35.5	38.8	36.9
Rainy Pass	20A09	4780	1/28	90	27.4	29.8	30.9
Safety Harbor	20A30	6500	2/1	Discontinued		-	21.0
War Creek Pass	20A31	6500	2/1	Discontinued		-	36.2

*Average for years of record
#Average based on 1963-1977 Average
+Aerial stadia observation

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
ENTIAT RIVER							
Blue Creek G.S. +	20B28	5425	2/3	108	35.6	21.8	34.3
Brief	20B19	1600	1/27	30	7.4	7.6	7.0
Entiat Meadows +	20A33	4540	2/3	102	33.7	34.3	32.3
Entiat River Trail +	20A34	3325	2/3	70	17.5	18.9	14.5
Four Mile Ridge +	20B27	6800	2/3	74	24.4	21.8	30.9
Fox Camp +	20A36	6510	2/3	134	44.2	38.0	44.7
Pope Ridge	20B20	3450	1/27	56	13.9	16.4	15.2
Pugh Ridge +	20A32	6725	2/3	97	32.0	22.9	21.2
Shady Pass	20A37	6200	1/31	70	23.2	22.7	20.7
Snow Brushy +	20A35	3910	2/3	93	23.2	31.6	30.5
Tommy Creek +	20B21	4900	2/3	64	21.1	18.2	22.5
WENATCHEE RIVER							
Berne Mill Creek	21B23	3170	11/29	28	4.4	3.0	4.7
			12/30	52	12.0	14.5	11.0
			1/14	52	17.4	-	16.2
			1/31	57	18.8	24.0	21.5
Berne Mill Creek SP	21B41	3240	11/29	28	4.4	2.5	4.9
			1/31	52	19.2	22.2	20.0
Blewett Pass No. 2	20B02	4270	1/19	43	12.0	12.6	13.2
Chiwaukum G.S.	20B16	1810	11/29	13	1.0	0.4	1.5
			12/30	31	7.7	6.2	4.8
			1/14	27	8.6	-	7.1
			1/31	35	11.5	10.9	9.5
Lake Wenatchee	20B05	1970	11/29	16	1.6	0.4	1.7
			12/30	32	7.6	6.2	5.9
			1/14	29	9.9	-	9.7
			1/31	33	11.0	14.1	11.8
Leavenworth R.S.	20B17	1127	2/1	Discontinued		5.9	5.9
Lyman Lake	20A23	5900	1/28	141	47.3	49.9	39.8
Merritt	20B18	2140	11/29	16	2.0	1.0	2.5
			12/30	35	9.0	8.4	7.1
			1/14	32	10.4	-	11.2
			1/31	33	11.6	16.0	14.0
Stevens Pass	21B01	4070	11/29	34	7.2	5.3	8.5
			12/30	68	16.4	22.9	21.9
			1/14	79	28.8	-	30.1
			1/31	92	33.5	38.5	37.3
Stevens Pass Sand Shed	21B45	3700	11/29	28	4.6	3.7	8.2
			12/30	54	14.5	18.6	15.3
			1/14	61	21.4	-	22.5
			1/31	68	23.9	30.4	27.1
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	2/1	Discontinued		10.6	11.7
Colockum Creek Lower	20B23	4300	2/1	Discontinued		7.8	8.5
Trough # 2	20B25	5310	1/25	42	13.3	11.5	New

+Aerial stadia observation
#Average based on 1963-1977 Average

SNOW DATA TO FEBRUARY 1, 1983 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	1/28	29	7.4	6.8	6.7
Scout-A-Vista	20B04	3400	1/28	33	8.7	6.3	6.9
STEMILT CREEK							
Jump-Off	20B08	4450	2/1	Discontinued		8.4	7.1
Stemilt Slide	20B06	5000	1/27	46	12.6	12.1	11.2
Upper Wheeler	20B07	4400	1/27	43	12.3	8.4	8.4
YAKIMA RIVER							
Ahtanum R. S.	21C11	3100	12/22	31	7.9	5.4	3.2
			1/28	32	9.6	4.6	6.1
Big Boulder Creek	21B09	3200	1/18	39	13.6	-	-
Blewett Pass No. 2	20B02	4270	1/19	43	12.0	12.6	13.2
Bumping Lake Old	21C08	3450	12/29	42	9.6	7.1	6.5
			1/14	37	12.2	8.2	11.2
			1/26	43	13.5	12.1	13.3
Bumping Lake New	21C36	3400	12/29	47	11.8	6.8	8.3
			1/14	44	14.7	10.0	14.2
			1/26	50	16.3	16.1	16.8
Cayuse Pass	21C06	5300	1/31	164	64.7	54.4	59.5
Colockum Pass	20B09	5370	1/21	48	14.9	14.2	11.8
Cooke Creek	20B10	4123	2/1	Discontinued		5.1	5.3
Corral Pass	21B13	6000	2/1	Discontinued		36.9	17.2
Fish Lake	21B04	3371	1/18	64	21.1	-	-
Green Lake	21C10	6000	1/27	101	28.3	36.7	19.5
Grouse Camp	20B11	5385	1/20	59	18.3	15.3	12.3
High Creek	20B12	2930	2/1	Discontinued		4.9	5.5
Joe Lake	21B46	4624	2/1	Discontinued		-	41.8
Lake Cle Elum	21B14	2200	12/30	23	5.0	6.6	3.9
			1/12	14	5.6	7.4	7.7
			1/31	15	5.3	11.8	8.5
Lemah Creek	21B47	3327	2/1	Discontinued		40.9	31.0
Manashtash	20C01	3935	2/1	Discontinued		4.6	4.3
Morse Lake	21C17	5400	2/1	Discontinued		-	38.9
Nanum	20B13	3875	1/20	25	7.8	5.1	7.4
Olallie Meadows	21B02	3625	1/31	55	23.0	42.9	34.9
Satus Pass	20D01	4030	2/1	Discontinued		11.8	8.9
Stampede Pass	21B10	3860	11/29	35	9.3	3.5	6.9
			12/30	61	21.4	17.5	17.4
			1/31	72	28.2	40.2	31.5
Trail Creek	20B14	3360	2/1	Discontinued		4.2	2.9
Tunnel Avenue	21B08	2450	12/30	36	10.4	11.5	8.4
			1/11	38	13.1	13.2	15.0
			1/28	37	13.8	20.0	17.8
Van Epps Pass	20B26	5925	2/1	Discontinued		47.5	39.5
Walters Flat	20B15	3360	2/1	Discontinued		5.8	6.5
Waptus Lake	21B49	3024	2/1	Discontinued		43.0	32.3

#Average based on 1963-1977 Average

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
YAKIMA RIVER (Cont.)							
White Pass E. Side	21C28	4500	12/28	44	11.9	10.2	10.5
			1/13	51	16.7	15.6	14.4
			1/27	62	19.5	23.4	18.4
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	12/22	31	7.9	5.4	5.2
			1/28	32	9.6	4.6	6.1
Green Lake	21C10	6000	1/27	101	28.3	36.7	19.5
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	2/1	Discontinued		20.2	18.2
MILL CREEK							
Homestead	17C01	4030	2/1	Discontinued		10.5	7.2
Martin Springs	17C02	4400	2/1	Discontinued		12.7	10.3
High Ridge	18D19	4150	1/28	62	20.4	29.6	17.7
KLICKITAT RIVER							
Satus Pass	20D01	4030	2/1	Discontinued		11.8	8.9
COWLITZ RIVER							
Cayuse Pass	21C06	5300	1/31	164	64.7	54.4	59.5
White Pass E. Side	21C28	4500	12/28	44	11.9	10.2	10.5
			1/13	51	16.7	15.6	14.4
			1/27	62	19.5	23.4	18.4
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	1/31	164	64.7	54.4	59.5
Corral Pass	21B13	6000	2/1	Discontinued		36.9	17.2
Morse Lake	21C17	5400	2/1	Discontinued		-	38.9
GREEN RIVER							
Airstrip	21B24	1800	1/6	10	2.4	4.3	1.8
			1/31	0	0.0	4.6	5.6
Charley Creek	21B25	1200	1/6	0	0.0	1.3	1.5
			1/31	0	0.0	0.0	1.3

#Average based on 1963-1977 average

SNOW DATA TO FEBRUARY 1, 1983 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average#
GREEN RIVER (Cont.)							
Cougar Mountain	21B42	3200	2/1	Discontinued		24.0	17.3
Grass Mtn. No. 2	21B27	2900	1/31	13	3.8	12.7	15.2
Grass Mtn. No. 3	21B28	2100	1/31	0	0.0	6.3	5.2
Lester Creek	21B29	3100	1/6	39	10.6	11.7	8.5
			1/31	33	10.6	18.0	17.5
Lynn Lake	21B50	4000	1/6	24	6.8	15.1	8.5
			1/31	22	7.5	25.4	18.2
Sawmill Ridge	21B31	4700	1/6	45	13.6	15.8	13.7
			1/31	58	19.6	28.8	27.5
Snowshoe Butte	21B43	5000	2/1	Discontinued		49.6	40.8
Stampede Pass	21B10	3860	11/29	35	9.3	3.5	6.9
			12/30	61	21.4	17.5	17.4
			1/31	72	28.2	40.2	31.5
Twin Camp	21B30	4100	1/6	38	12.3	-	10.6
			1/31	47	15.5	26.0	18.4
SNOQUALMIE RIVER							
Olallie Meadows	21B02	3625	1/31	55	23.0	42.9	34.9
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	11/29	34	7.2	5.3	8.5
			12/30	68	16.4	22.9	21.9
			1/14	79	28.8	-	30.1
			1/31	92	33.5	38.5	37.3
Stevens Pass Sand Shed	21B45	4070	11/29	28	4.6	3.7	8.2
			12/30	54	14.5	18.6	15.3
			1/14	61	21.4	-	22.5
			1/31	68	23.9	30.4	27.1
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	1/27	31	10.7	13.4	12.2
Beaver Pass	21A01	3680	1/28	65	24.1	23.6	24.4
Brown Top Ridge	21A28	6000	1/28	130	39.2	46.5	48.1
Cloudy Pass	20A22	6500	2/1	Not Measured		-	30.0
Devils Park	20A04	5900	1/27	97	30.4	32.6	34.0
Freezeout Creek Trail	20A01	3500	1/28	34	9.7	11.7	11.3
Freezeout Meadows New	20A38	5000	1/28	100	37.3	23.0	28.2
Granite Creek	21A29	3500	1/28	51	14.6	13.9	16.3
Harts Pass	20A05A	6500	1/28	102	31.3	30.0	34.2
Klesilkwa	3D03A-Can	3700	1/28	24	9.9	14.7	9.5*
Lightning Lake	3D02-Can	4000	2/1	Not Measured		-	5.8*
Lyman Lake	20A23	5900	1/28	141	47.3	49.9	39.8
Meadow Cabins	20A08	1900	1/28	13	4.1	7.1	6.9
New Hozomeen Lake	21A30	2800	1/28	28	8.4	9.7	10.5

#Average based on 1963-1977 Average

*Average for years of record

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
SKAGIT RIVER (Cont.)							
New Tashme	3D01A-Can	2500	2/1	18	6.0	11.2	8.3*
Rainy Pass	20A09	4780	1/28	90	27.4	29.8	30.9
Thunder Basin	20A07	4200	1/28	51	16.0	8.0	17.0
BAKER RIVER							
Dock Butte +	20A11A	3800	12/27	102	36.0	29.0	27.8
			1/29	90	36.0	-	47.4
Easy Pass +	21A07A	5200	12/27	66	23.0	23.0	30.9
			1/29	132	53.0	-	51.7
Jasper Pass +	21A06A	5400	12/27	120	42.0	39.0	43.0
			1/29	169	77.0	-	66.5
Marten Lake	21A09A	3600	12/27	107	37.0	27.0	34.8
			1/29	125	50.0	-	55.4
Mt. Blum +	21A18a	5800	12/27	58	20.0	19.0	30.4
			1/29	114	66	-	48.4
Rocky Creek	21A12A	2100	12/27	32	11.0	20.0	13.0
			1/29	40	14.0	-	24.7
Schreibers Meadow	21A10A	3400	12/27	76	27.0	25.0	24.9
			1/29	72	29.0	-	41.0
S. F. Thunder Creek +	21A14A	2200	12/27	11	4.0	8.0	5.4
			1/29	0	0.0	-	10.0
Watson Lakes	21A08A	4500	12/27	72	25.0	23.0	27.5
			1/29	111	44.0	-	44.4
NOOKSACK RIVER							
Glacier Creek	21A23	3700	2/1	Discontinued		-	8.5
Panorama New	21A26	4300	2/1	Discontinued		-	48.7
OLYMPIC PENINSULA DRAINAGE							
DUNGENESS RIVER							
Deer Park	23B04	5200	1/31	52	17.8	18.6	15.2
MORSE CREEK							
Cox Valley	23B14	4500	1/30	81	30.2	32.4	29.1
ELWHA RIVER							
Hurricane	23B03	4500	1/27	46	15.1	15.2	16.4

#Average based on 1963-1977 Average
*Average for years of record
+Aerial stadia observation

SNOTEL READINGS, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average †
PEND OREILLE RIVER							
Bunchgrass Meadow	17A01	5000	1/1		13.5	8.3	
			1/31		24.3	14.7	
OKANOGAN & METHOW RIVERS							
Harts Pass	20A05	6500	1/1		16.7	-	
		GT	1/28	102	31.3	(29.8)	
			2/1		30.0	-	
Salmon Meadow	19A02	4500	1/1		11.2	-	
			2/1		19.6	9.0	
CHELAN LAKE BASIN							
Lyman Lake	20A23	5900	1/1		28.4	-	
		GT	1/28	137	37.8	(37.8)	
			2/1		38.2		
Mirror Lake	20A39	5600	1/1		-	17.4	
		GT	1/28	84	26.8	(-)	
			2/1		-	-	
Park Creek Ridge	20A12	4600	1/1		17.4	19.3	
		GT	1/28	103	35.5	(31.0)	
			1/31		31.4	34.3	
Rainy Pass	20A09	4780	1/1		14.4	-	
		GT	1/28	90	27.4	(27.9)	
			2/1		29.2	-	
ENTIAT RIVER							
Pope Ridge	20B20	3450	1/1		10.4	10.7	
		GT	1/27	58	15.5	(15.0)	
			2/1		14.8	17.2	
WENATCHEE RIVER							
Blewett Pass	20B02	4270	1/1		9.0	9.3	
		GT	1/19	43	12.0	(12.5)	
			2/1		14.6	16.9	
Lyman Lake	20A23	5900	1/1		28.4	-	
		GT	1/28	137	37.8	(37.8)	
			2/1		38.2	-	
Stevens Pass	21B01	4070	1/1		20.7	14.6	
			2/1		18.2	29.2	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth Measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
WENATCHEE RIVER (Cont.)							
Trough # 2	20B25	5300	1/1		-	10.7	
		GT	1/25	42	13.3	(-)	
			2/1		13.9	11.7	
COLOCKUM CREEK							
Trough # 2	20B25	5300	1/1		-	10.7	
		GT	1/25	42	13.3	(-)	
			2/1		13.9	11.7	
STEMILT CREEK							
Upper Wheeler	20B07	4400	1/1		15.3	15.4	
			2/1		22.6	21.0	
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	1/1		11.9	14.8	
		GT	1/18	41	13.0	(14.5)	
			2/1		15.9	24.0	
Bumping Ridge	21C38	4600	1/1		-	2.6	
		GT	1/26	69	22.4	(-)	
			2/1		-	4.1	
Corral Pass	21B13	6000	1/1		15.1	16.8	
			2/1		24.8	30.3	
Fish Lake	21B04	3371	1/1		-	-	
		GT	1/18	64	21.1	(-)	
			2/1		-	-	
Green Lake	21C10	6000	1/1		12.8	13.7	
		GT	1/27	101	28.3	(20.1)	
			2/1		20.9	20.1	
Grouse Camp	20B11	5385	1/1		11.9	-	
		GT	1/20	59	18.3	(17.5)	
			2/1		16.2	-	
Morse Lake	21C17	5400	1/1		28.6	28.3	
			2/1		48.1	44.9	
White Pass (E.S.)	21C28	4500	1/1		10.9	11.2	
		GT	1/27		19.5	(19.5)	
			2/1		19.4	23.6	

GT = Ground Truth Measurement at SNOTEL site

NOTE: () following GT measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
AHTANUM CREEK							
Green Lake	21C10	6000	1/1		12.8	13.7	
		GT	1/27	101	28.3	(20.1)	
			2/1		20.9	20.1	
TOUCHET RIVER							
Touchet # 2			1/1		14.2	19.1	
			2/1		21.8	37.5	
LEWIS RIVER							
June Lake	22C09	3200	1/1		-	19.0	
			2/1		-	31.7	
Lone Pine Shelter	21C26	3800	1/1		-	18.0	
			2/1		28.3	35.9	
Plains of Abraham	22C01	4400	1/1		-	43.4	
			2/1		-	-	
Sheep Canyon	22C10	4050	1/1		-	12.1	
			2/1		-	33.8	
Spencer Meadow	21C20	3400	1/1		17.0	-	
			2/1		21.1	-	
Surprise Lakes	21C13	4250	1/1		-	27.7	
			2/1		32.7	48.4	
		GT	1/31	91	31.3	(32.4)	
COWLITZ RIVER							
Pigtail Peak	21C33	5900	1/1		21.0	25.0	
			2/1		36.2	43.7	
Potato Hill	21C14	4500	1/1		-	13.0	
			2/1		-	20.4	
Sheep Canyon	22C10	4050	1/1		-	12.1	
			2/1		-	33.8	
Strawberry Landing	22C08	3280	1/1		16.7	29.9	
			2/1		25.5	51.3	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
NISQUALLY RIVER							
Paradise Park	21C35	5500	1/1		-	31.8	
			2/1		-	-	
WHITE RIVER							
Corral Pass	21B13	6000	1/1		15.1	16.8	
			2/1		24.8	30.3	
Morse Lake	21C17	5400	1/1		28.6	28.3	
			2/1		48.1	44.9	
GREEN RIVER							
Cougar Mountain	21B42	3200	1/1		4.8	12.1	
			2/1		6.0	23.0	
Stampede Pass	21B10	3860	1/1		12.0	18.9	
		GT	2/1	75	28.5	(27.0)	
			2/1		27.0	44.1	
SNOQUALMIE RIVER							
Olallie Meadows East	21B55	3960	1/1		22.1	-	
			2/1		35.9	-	

GT = Ground Truth Measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

SNOTEL PRECIPITATION GAGES

Amount of precipitation in inches recorded on or near the last day of each month.

DATE	Big Boulder	Blewett Pass	Bumping Lake	Bunchgrass Mdw
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	4.3	3.0	9.6	4.7
11-30-81	9.0	5.6	11.7	9.7
12-31-81	-	14.1	19.7	16.3
1-31-82	-	23.4	25.4	16.3
2-28-82	-	28.0	-	25.7
3-31-82	27.7	28.2	-	30.8
4-30-82	30.2	29.9	-	37.6
5-31-82	30.8	30.6	-	39.6
6-30-82	31.6	31.9	59.6	43.1
7-31-82	32.2	32.4	62.4	45.2
8-31-82	32.3	32.9	63.0	47.2
9-30-82	34.9	34.5	65.4	52.6

DATE	Corral Pass	Cougar Mtn.	Fish Lake	Green Lake
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	2.3	8.5	5.7	-
11-30-81	8.6	14.4	10.1	6.4
12-31-81	21.1	32.0	20.9	18.8
1-31-82	34.9	54.4	31.9	-
2-28-82	46.7	64.2	52.6	-
3-31-82	52.7	65.8	62.3	-
4-30-82	59.5	-	63.5	-
5-61-82	61.1	64.1	64.1	-
6-30-82	62.5	66.5	64.5	-
7-31-82	65.3	-	66.1	-
8-31-82	66.9	-	67.2	Recharge
9-30-82	71.1	119.5	71.1	2.4

DATE	Harts Pass	June Lake	Lone Pine	Morse Lake
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	3.3	23.2	13.5	9.3
11-30-81	8.2	45.4	25.6	21.2
12-31-81	17.0	-	43.1	28.8
1-31-82	27.7	118.0	51.9	39.3
2-28-82	31.6	159.1	82.0	-
3-31-82	40.1	183.8	92.3	-
4-30-82	44.3	204.9	100.7	-
5-31-82	47.4	206.7	-	-
6-30-82	47.6	-	-	77.9
7-31-82	53.1	-	148.9	87.4
8-31-82	-	-	150.4	88.0
9-30-82	51.6	217.2	156.0	91.5

DATE	Olallie Meadows	Paradise	Park Creek Ridge	Pigtail Peak
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	3.5	-	4.1	4.2
11-30-81	11.9	9.7	6.0	11.2
12-31-81	34.6	32.6	20.9	22.5
1-31-82	-	39.6	34.6	25.6
2-28-82	-	72.9	49.8	34.9
3-31-82	-	84.8	54.8	40.5
4-30-82	-	102.7	58.4	49.7
5-31-82	-	-	60.2	-
6-30-82	117.4	-	61.1	52.8
7-31-82	123.1	-	63.7	54.7
8-31-82	125.5	-	65.8	55.7
9-30-82	134.0	-	68.2	59.2

DATE	Pope Ridge	Potato Hill	Rainy Pass	Salmon Mdw.
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	0.5	5.4	4.2	4.6
11-30-81	5.3	14.0	9.6	-
12-31-81	13.0	29.2	19.3	-
1-31-82	25.8	46.1	28.7	16.2
2-28-82	-	-	29.9	18.7
3-31-82	-	-	30.6	23.8
4-30-82	-	-	-	26.9
5-31-82	-	-	54.2	28.2
6-30-82	61.0	75.2	57.7	30.7
7-31-82	58.5	77.1	61.9	35.4
8-31-82	59.4	78.0	63.4	38.2
9-30-82	60.9	82.4	67.0	39.2

DATE	Sheep Canyon	Spencer Meadow	Stevens Pass	Strawberry Landing
10-1-81	Recharge	Recharge	Recharge	Recharge
10-31-81	19.4	10.0	-	9.7
11-30.81	33.5	23.2	4.2	28.4
12-31-81	56.8	44.7	14.6	43.3
1-31-82	96.9	64.9	28.9	56.6
2-28.82	-	-	42.0	70.4
3-31-82	138.6	-	47.3	78.2
4-30-82	155.7	72.3	51.6	91.0
5-31-82	-	72.9	53.0	92.6
6-30-82	85.4	75.3	53.6	95.2
7-31-82	88.1	80.7	55.5	96.9
8-31-82	90.6	81.9	-	-
9-30-82	99.1	86.6	95.6	125.4

DATE	Surprise Lakes Recharge	Touchet Recharge	Trough # 2 Recharge	Upper Wheeler Recharge
10-1-81				
10-31-81	8.5	4.4	3.7	4.3
11-30-81	22.6	11.1	8.0	10.1
12-31-81	45.4	23.8	13.1	16.3
1-31-82	65.7	38.8	16.0	21.6
2-28-82	85.4	-	19.5	29.1
3-31-82	96.9	-	-	-
4-30-82	109.2	27.5	-	-
5-31-82	111.5	30.3	20.6	33.0
6-30-82	-	33.2	22.1	35.8
7-31-82	115.3	35.9	23.4	35.8
8-31-82	116.1	36.7	23.7	-
9-30-82	121.1	38.9	25.5	36.6

DATE	White Pass Recharge
10-1-81	
10-31-81	4.1
11-30-81	8.4
12-31-81	16.7
1-31-82	28.6
2-28-82	41.2
3-31-82	43.0
4-30-82	46.5
5-31-82	47.2
6-30-82	48.7
7-31-82	-
8-31-82	48.7
9-30-82	51.6

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
- Corps of Engineers

U. S. Department of Agriculture
- Forest Service

U. S. Department of Commerce
- NOAA, National Weather Service

U. S. Department of the Interior
- Bonneville Power Administration
- Bureau of Reclamation
- Geological Survey
- National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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United States
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Agriculture

Soil
Conservation
Service

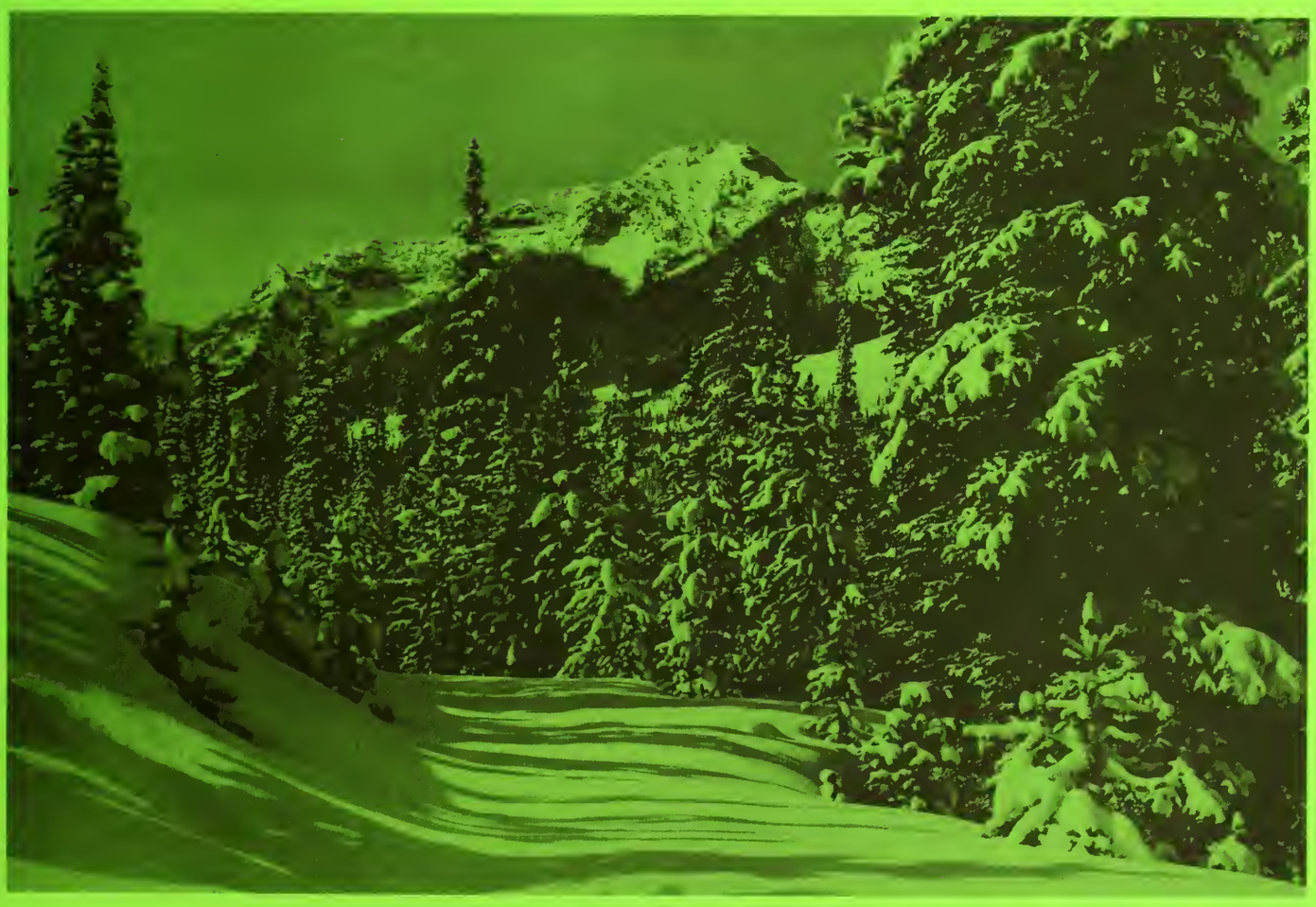
Spokane,
Washington

Water Supply Outlook for Washington

as of MARCH 1, 1983

in cooperation with

Department of Ecology
State of Washington



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TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: Fresh powder snow on Elephant Mountain, near the West Fork of Hyalite Creek, in Montana.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420-Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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WATER SUPPLY OUTLOOK

State of Washington

March 1, 1983

Water supplies are expected to be near average for most of Washington during this next spring and summer. The mountain snowpack is close to normal on almost all rivers and streams. Precipitation during February was generally heavier than normal except for Northwest Washington where it was near average. Reservoir storage is good with stored water at average to above average March 1 levels. Streamflow is expected to be good next summer.

SNOW COVER

The snowpack is close to average on most Washington watersheds. The Snoqualmie, Green, and Cedar rivers have experienced considerable melt and runoff due to a high freezing level and rain. The snow cover is much below the March 1 average on all three streams. The best snowpack in the state is on Ahtanum Creek near Yakima where it is 148% of average. A snowcover near 120% of average exists on the Methow and Okanogan drainages. All other areas of the state are 80 to 120% of normal.

PRECIPITATION

February was wetter than normal over the State of Washington except for the northwest side of the Cascades where it was near average. Percents of normal ranged from near 120% in Southwest Washington and on the east side of the Cascades to 185% in the north central part of the state. Warm temperatures caused much of this precipitation to fall as rain with subsequent above normal streamflow. Winter precipitation since November 1 has been near average to above average.

RESERVOIR STORAGE

Reservoir storage is excellent for March 1. The Yakima reservoirs are currently holding 758,900 acre feet, 108% of average. Roosevelt Lake is 168%, and Lake Chelan is 99% of the normal level for this time of year. The storage in Ross Reservoir is 96% of average.

STREAMFLOW

Streamflow during February was extremely good on most streams due to the above normal precipitation and warm temperatures. The flow was 206% on the Kettle, 145% on the Okanogan, 120% on the Yakima, 101% on the Cowlitz and 96% on the Skagit. Forecasts of spring and summer streamflow are 80 to 120% of average on most rivers. Exceptions are the Kettle at 124%, Colville at 131%, and the Cedar and Green rivers which will flow near 75% of normal.

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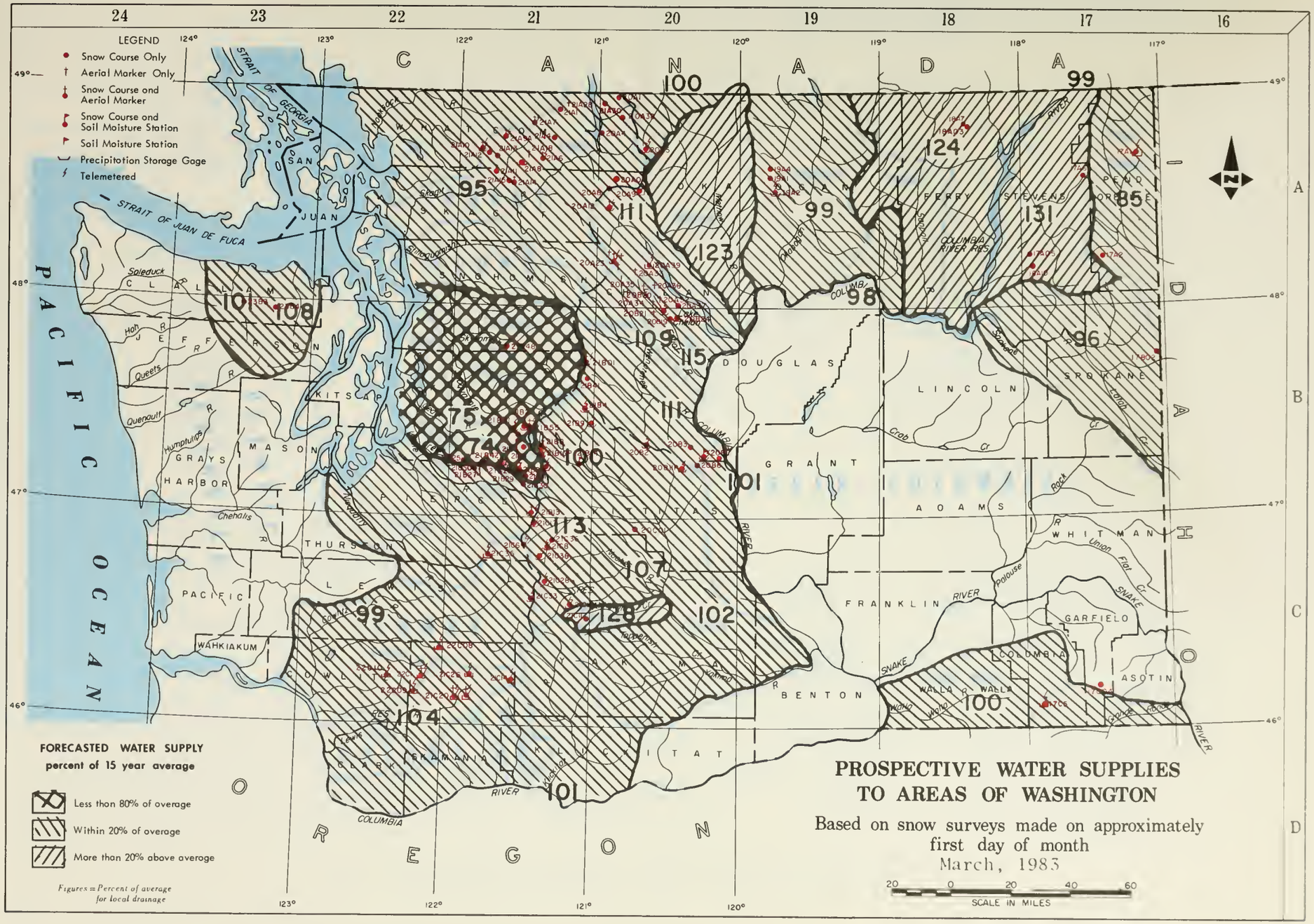

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Kettle River					
Summit G. S.	18A7	20	39N	35E	4600
Spokane River					
Ragged Ridge	17802	12	27N	45E	3333
Colville River					
Baird	17A6	19	36N	42E	3215
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Okanogan River					
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Salmon Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Lake Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Mirror Lake	20A39	30	31N	18E	5600
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2 SP	35	22N	17E	4270
Stevens Pass	21B1SP	14	26N	13E	4070
Trough #2	20B25SP	10	20N	20E	5310
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Stemilt Creek					
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20B11SP	29	21N	19E	5385
Lake Cle Elum	21B14M	15	20N	14E	2200
Morse Lake	21C17SP	6	16N	11E	5400
Tunnel Avenue	21B8P	13	21N	11E	2450
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Touchet No. 2	17C5SP	6	7N	40E	5530
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lone Pine Shelter	21C26SP	8	9N	7E	3800
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	3280

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
Olallie Meadows East	21B55SP	20	22N	11E	3700
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Morten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

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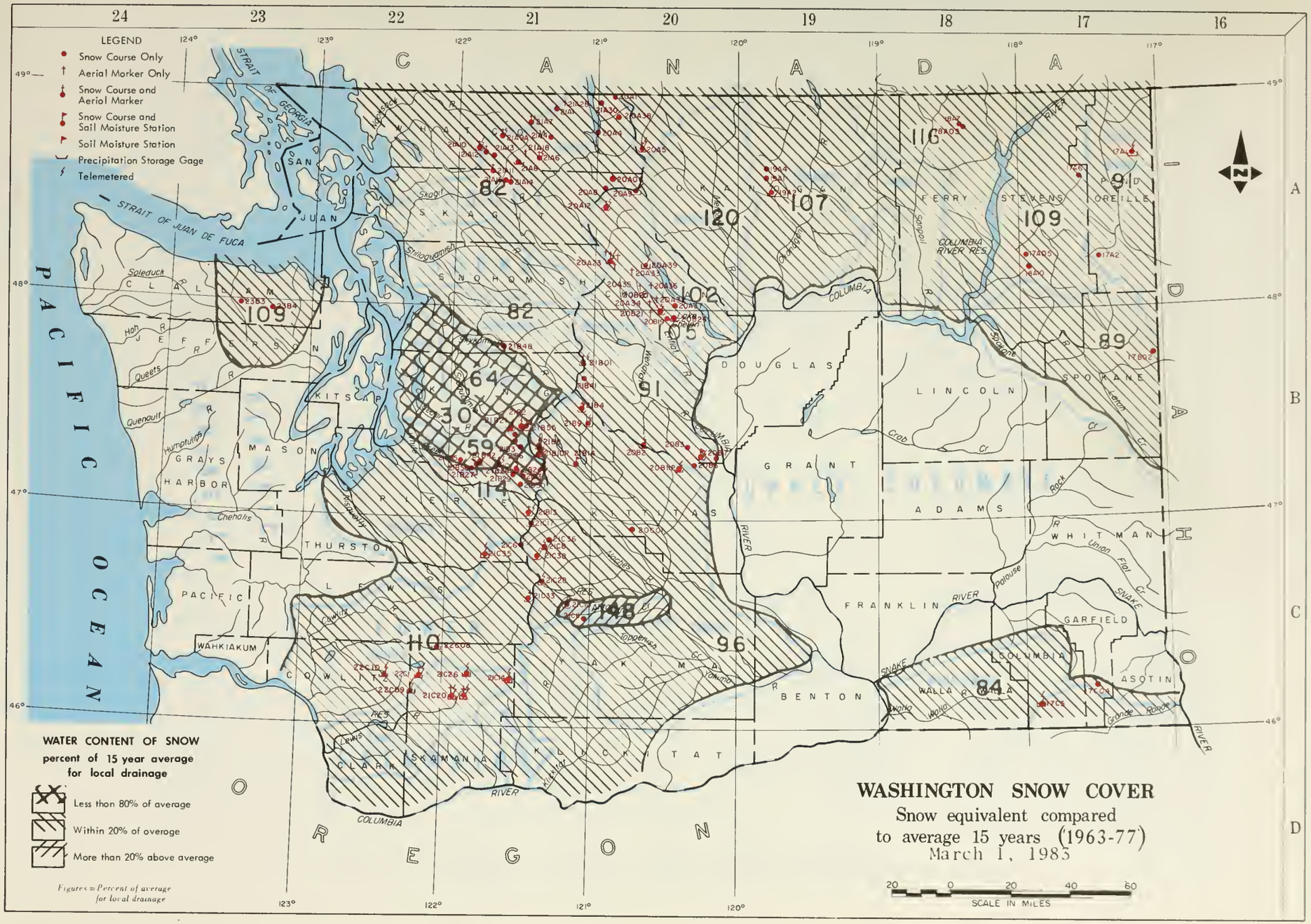


INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Kettle River					
Summit G. S.	18A7	20	39N	35E	4600
Spokane River					
Ragged Ridge	17B02	12	27N	45E	3333
Colville River					
Baird	17A6	19	36N	42E	3215
Stranger Mountain	17A5	26	31N	38E	4990
Tago	18A10	6	29N	38E	3370
Okanogan River					
Muttan Creek No. 1	19A1	30	37N	24E	5700
Muttan Creek No. 2	19A4	19	37N	24E	6000
Salmon Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Lake Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Mirror Lake	20A39	30	31N	18E	5600
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Fox Camp	20A36a	17	30N	18E	6510
Pape Ridge	20B20	22	29N	18E	3540
Pape Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2SP	35	22N	17E	4270
Stevens Pass	21B1SP	14	26N	13E	4070
Trough #2	20B25SP	10	20N	20E	5310
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Stemilt Creek					
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20B11SP	29	21N	19E	5385
Lake Cle Elum	21B14M	15	20N	14E	2200
Morse Lake	21C17SP	6	16N	11E	5400
Tunnel Avenue	21B8P	13	21N	11E	2450
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Touchet No. 2	17C5SP	6	7N	40E	5530
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lone Pine Shelter	21C26SP	8	9N	7E	3800
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	3280

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
Olallie Meadows East	21B55SP	20	22N	11E	3700
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

STREAMFLOW FORECASTS - MARCH, 1983

The following summarized runoff forecasts are based principally on mountain snowcover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify the streamflow. The forecasts are a cooperative effort of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1982 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1983	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Forecast period	1982	1981	1980	15-Yr. Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM							
Columbia River	44900	99	Apr-Sept		48531	40810	45510
at Birchbank 1/	35900	99	Apr-July		38501	34081	36358
	25900	99	Apr-June		27002	27618	26197
Columbia River	66800	98	Apr-Sept		70303	61016	68026
at Grand Coulee 1/	55900	98	Apr-July		58525	52320	57050
	43400	98	Apr-June		44235	43871	44280
Columbia River	74700	101	Apr-Sept		77308	66512	73911
bl. Rock Island Dam 1/	63000	101	Apr-July		64689	57767	62444
	49000	101	Apr-June		49348	48667	48479
Columbia River	105900	101	Apr-Sept		96188	91737	103477
at The Dalles, OR 1/	88900	100	Apr-July		81125	79919	88503
	71200	100	Apr-June		63521	68304	71219
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	13300	85	Apr-Sept		13896	13271	15643
bl. Box Canyon	12200	85	Apr-July		13179	12116	14334
	10435	85	Apr-June		11594	10776	12277
KETTLE RIVER SYSTEM							
Kettle River	2296	124	Apr-Sept		2184	1835	1845
nr. Laurier	2214	126	Apr-July		2013	1747	1753
	2015	127	Apr-June		1657	1603	1587
Colville River	176	131	Apr-Sept		125	116	134
at Kettle Falls	162	132	Apr-July		111	105	123
	152	132	Apr-June		94	97	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Fore cast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
SPOKANE RIVER SYSTEM **							
Spokane River	2780	96	Apr-Sept		2238	2214	2910
at Post Falls, ID 2/	2672	95	Apr-July		2145	2046	2733
	2470	95	Apr-June		1960	1904	2600
OKANOGAN RIVER SYSTEM							
Similkameen River	1520	100	Apr-Sept		1241	1479	1517
nr. Nighthawk	1420	100	Apr-July		1118	1391	1417
	1192	100	Apr-June		930	1247	1192
Okanogan River	1710	99	Apr-Sept		1631	1551	1718
nr. Tonasket	1560	100	Apr-July		1416	1423	1564
	1304	100	Apr-June		1107	1240	1304
METHOW RIVER SYSTEM							
Methow River	1240	123	Apr-Sept		786	996	1011
nr. Pateros	1150	123	Apr-July		724	934	937
	972	123	Apr-June		602	811	791
CHELAN RIVER SYSTEM							
Chelan River	1435	116	Apr-Sept		916	1120	1238
at Chelan 3/	1274	118	Apr-July		798	1020	1080
	992	119	Apr-June		621	859	834
Stehekin River	983	111	Apr-Sept		662		883
at Stehekin	863	116	Apr-July		543		744
	652	117	Apr-June		403		557
Entiat River	278	115	Apr-Sept		186	216	241
nr. Ardenvoir	255	117	Apr-July		168	200	218
	204	117	Apr-June		137	172	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	1409	109	Apr-Sept				1297
at Plain	1277	110	Apr-July				1156
	993	110	Apr-June				903
Wenatchee River	1957	111	Apr-Sept		1188	1516	1767
at Peshastin	1771	112	Apr-July		1075	1399	1586
	1429	114	Apr-June		869	1208	1250
Stemilt Basin nr. Wenatchee	138*	100	May-Sept				138*
Icicle Creek	380	102	Apr-Sept				371
nr. Leavenworth	362	106	Apr-July				342
	304	109	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by Jerry Beard, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
YAKIMA RIVER SYSTEM							
Yakima River	144	100	Apr-Sept		95	115	144
nr. Martin 4/	134	101	Apr-July		82	103	133
	115	101	Apr-June		73	95	114
Yakima River	975	100	Apr-Sept		700	792	975
at Cle Elum 5/	882	100	Apr-July		643	716	882
	750	100	Apr-June		563	646	750
Yakima River	2211	102	Apr-Sept		1194	1833	2168
nr. Parker 6/	1993	102	Apr-July		1059	1733	1954
	1726	102	Apr-June		961	1610	1693
Kachess River	126	100	Apr-Sept		81	111	126
nr. Easton 7/	121	102	Apr-July		72	105	119
	107	104	Apr-June		66	91	103
Cle Elum River	479	100	Apr-Sept		313	-	479
nr. Roslyn 8/	435	100	Apr-July		282	350	435
	369	103	Apr-June		244	314	358
Bumping River	160	110	Apr-Sept		78	129	146
nr. Nile 9/	150	114	Apr-July		70	120	132
	121	114	Apr-June		63	111	106
American River	144	113	Apr-Sept	140	63	121	127
nr. Nile	133	115	Apr-July	130	58	105	116
	112	118	Apr-June	109	51	114	95
Tieton River	284	113	Apr-Sept		148	224	252
at Tieton Dam 10/	246	116	Apr-July		131	192	212
	195	116	Apr-June		108	166	168
Naches River	952	107	Apr-Sept		419	729	893
nr. Naches 11/	887	110	Apr-July		380	694	806
	759	112	Apr-June		339	638	678
Ahtanum Creek	60	128	Apr-Sept				47
nr. Tampico 12/	54	128	Apr-July				42
	47	128	Apr-June				37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr.	Fore cast	1982	1981	1980	15-yr. Average 63-77
		Seasonal Streamflow in Thousands of Acre-Feet					
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	17.50	100	Apr-Sept	24.62		11.65	17.50
at Walla Walla	17.33	100	Apr-July	24.48		11.64	17.33
	17.15	100	Apr-June	21.63		11.64	17.15
Lewis River	1348	104	Apr-Sept		1096	1001	1298
at Ariel 13/	1185	105	Apr-July		971	883	1128
	1046	105	Apr-June		865	798	992
Cowlitz River	2100	99	Apr-Sept			1626	2126
bl. Mayfield Dam	1830	99	Apr-July			1432	1854
	1537	99	Apr-June			1275	1553
Cowlitz River	2830	102	Apr-Sept		2390	1976	2766
at Castle Rock	2460	102	Apr-July		2125	1852	2401
	2070	102	Apr-June		1875	1649	2029
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	173	108	Apr-Sept				160
nr. Sequim	146	112	Apr-July				130
	108	112	Apr-June				96
ELWHA RIVER SYSTEM							
Elwha River	557	101	Apr-Sept				553
nr. Port Angeles	458	101	Apr-July				454
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	2100	95	Feb-Aug				2532
at Newhalem 15/	2206	94	Apr-Sept				2356
	1850	94	Apr-July				1972
	1443	97	Apr-June				1485
GREEN RIVER SYSTEM							
Green River	238	75	Apr-Sept				316
bl. Howard Hanson Dam 16/	216	76	Apr-July				284
	196	77	Apr-June				256
CEDAR RIVER SYSTEM							
Cedar River	70	75	Apr-Sept				93
nr. Cedar Falls	66	78	Apr-July				84
	57	78	Apr-June				73

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about March 1, 1983, as percent of the same date in 1982 and 1981 and average of record.

Tributary Basin	No. of Courses Average	1983 Snow Water Expressed as percent of 1982	1981	1963-77 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	14	87	241	91
Kettle	10	116	183	116
Colville	1	112	-	109
Spokane	12	92	242	89
Okanogan	33	102	174	107
Methow	4	116	141	120
Chelan	5	81	157	102
Entiat	9	95	157	100
Wenatchee	9	80	238	91
Yakima	14	100	329	106
Ahtanum	2	142	288	148
LOWER COLUMBIA				
Mill Creek	1	68	189	84
Cowlitz	2	94	357	110
PUGET SOUND				
White	1	93	284	114
Cedar	1	28	-	30
Green	6	53	406	59
Snoqualmie	2	60	530	64
Skykomish	2	76	260	82
Skagit	16	80	270	82
OLYMPIC PENINSULA				
Morse	1	96	467	110
Elwha	1	95	1016	95
Dungeness	1	96	470	121

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured March 1 1983	1982	1982	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	222.2	433.7	117.5	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	4470.7	4049.4	4813.9	2681.2
Columbia	Banks Lake	714.9	712.2	706.9	538.0	621.3
Okanogan	Conconully Reservoir	13.0	12.4	10.2	7.8	6.7
Okanogan	Conconully Lake	10.5	10.4	8.9	10.4	7.5
Chelan	Lake Chelan	676.1	233.3	269.4	437.3	235.5
		YAKIMA				
Yakima	Keechelus Lake	157.8	100.3	121.8	143.4	105.4
Kachess	Kachess Lake	239.0	207.2	182.1	204.1	183.0
Cle Elum	Lake Cle Elum	436.9	309.6	118.7	267.3	280.2
Bumping	Bumping Lake	33.7	6.8	16.5	32.5	8.7
Tieton	Rimrock Lake	198.0	135.0	153.6	197.5	125.3
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	856.2	799.4	1287.6	894.0
Skagit	Diablo Reservoir	90.6	89.0	84.3	85.2	85.2
Skagit	Gorge Reservoir	9.8	8.4	7.6	8.0	8.1

1/ Based on Active Storage

* 15-yr. Average 1963-1977

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1982 Observed	FALL Sept-Oct 1982 2/ Departure	WINTER Nov. 1982 - Feb. 1983 Observed	WINTER Nov. 1982 - Feb. 1983 2/ Departure
Columbia in Canada	5.40	+0.38	11.24	-2.32
Pend Oreille - Spokane	4.85	+0.81	15.48	+0.46
Northeastern Washington	2.73	+0.25	11.07	+2.96
Southeastern Washington	4.19	+1.68	9.04	+0.27
East Slope Cascades	6.27	+1.52	27.39	+3.19
North Central Washington	2.35	+0.76	7.42	+ 1.64
Northwest Slope Cascades	12.32	-0.89	43.66	-3.44
Southwest Slope Cascades	10.16	+1.48	37.15	+1.67

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages.
East Slope Cascades	- Yakima, Wenatchee and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

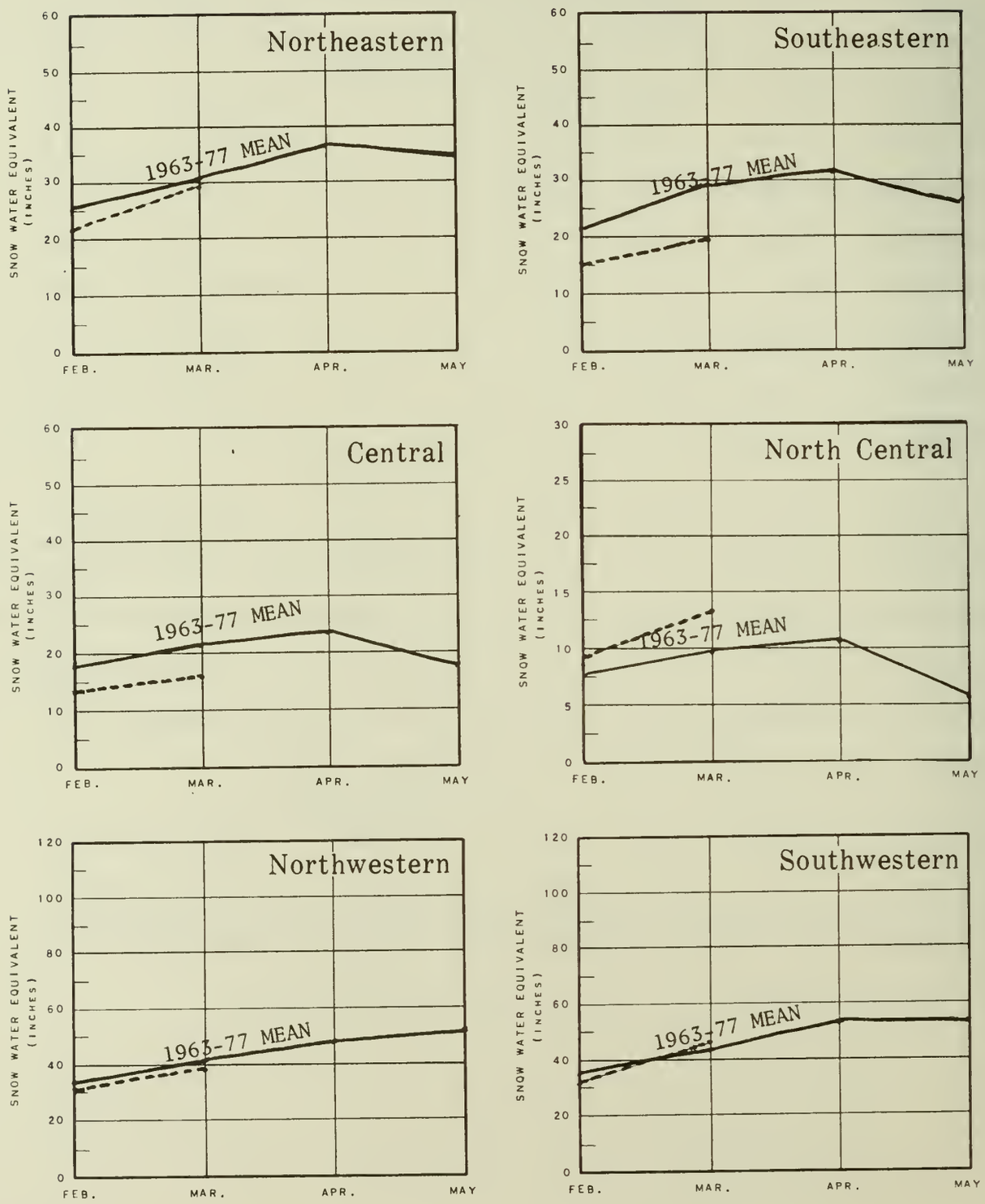
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1983

DRAINAGE AREAS



Average ———
1983 - - - - -

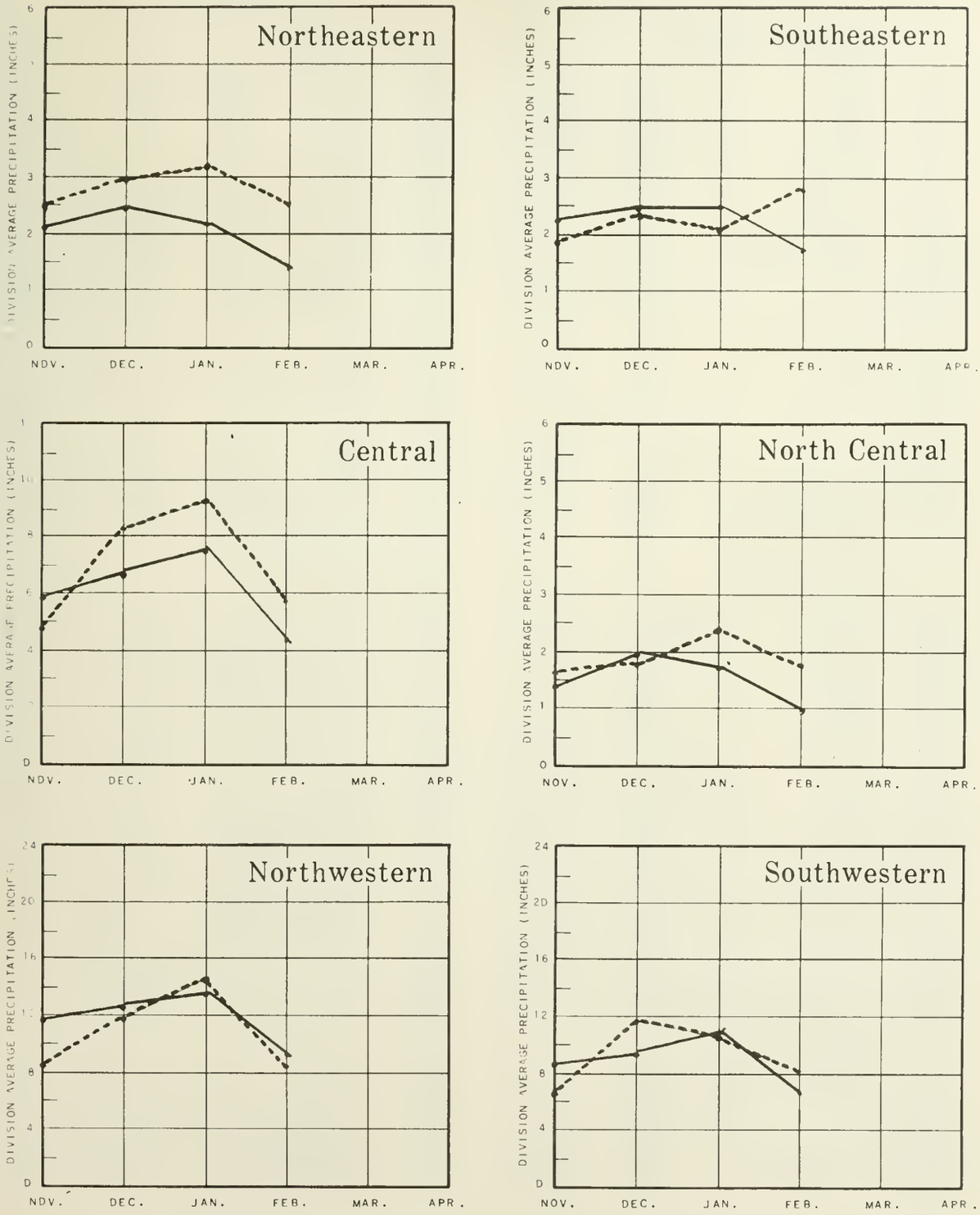
Selected Snow Survey Courses by Soil Conservation Service

M7-L-22028G

WASHINGTON VALLEY PRECIPITATION

1983

DRAINAGE AREAS



Average ———
1983 - - - - - -

Preliminary Analysis by National Weather Service

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	2/24	97	38.9	45.4	43.8
Baree Midway	15B16	4600	2/24	83	30.6	34.1	34.0
Baree Trail	15B15	3800	2/24	14	4.8	8.6	10.0
Benton Meadow	16A02	2344	2/25	10	2.5	7.4	6.4
Benton Spring	16A03	4900	2/25	53	19.3	15.8	17.7
Boyer Mountain	17A02	5250	2/24	73	26.6	20.2	23.1
Brush Creek Timber	14A13	5000	2/28	28	7.5	10.0	9.5
Bunchgrass Meadow	17A01	5000	2/25	89	32.3	-	-
Chewelah	17A04	4923		Discontinued		13.1	14.3
Heart Lake Trail	14C10	4800	2/26	43	15.4	20.8	21.1
Hoodoo Basin	15C10	6000	2/26	111	40.4	49.9	45.4
Hoodoo Creek	15C01	5900	2/26	105	36.6	47.5	42.0
Lookout	15B02	5250	2/28	80	29.0	30.6	31.0
Mosquito Ridge	16A04A	5100	2/27	115	40.4	38.3	34.6
Nelson	2D04-Can	3050	2/25	48	16.1	16.1	14.3*
Schweitzer Bowl	16A06	4500	3/1	90	34.5	31.2	28.1
Schweitzer Ridge	16A05	6100	3/1	123	49.0	44.6	40.3
Winchester Creek	17A03	2970		Discontinued		9.3	10.6
KETTLE RIVER							
Barnes Creek	2B06-Can	5300	2/24	50	15.7	19.1	17.3*
Big White Mtn.	2E03-Can	5500	2/27	65	20.4	18.1	17.0*
Boulder Road	18A02	1450		Discontinued		4.0	4.5
Butte Creek	18A03	4070	2/26	38	11.3	7.5	8.5
Cabin Creek	18A08	3170		Discontinued		7.1	7.2
Carmi	2E02-Can	4100	2/27	29	7.7	5.6	6.1*
Farron # 1	2B02-Can	4000	2/28	56	15.6	12.5	12.1*
Farron # 2	2B02A-Can	4000	2/28	55	15.2	12.8	11.4*
Goat Creek	18A04	3595		Discontinued		6.4	6.4
Graystoke Lake	2F04-Can	5950	3/1	45	13.9	12.0	14.1*
Monashee Pass	2E01-Can	4500	2/24	36	11.7	13.6	12.4*
Snow Caps Creek	18A05	2150		Discontinued		4.4	4.8
Snow Caps Trail	18A06	2720		Discontinued		5.9	5.8
Summit G.S.	18A07	4600	2/26	27	8.1	6.4	7.3
Trapping Creek Lower	2E05-Can	3050	2/26	21	5.7	5.0	5.1*
Trapping Creek Upper	2E04-Can	4450	2/26	39	10.4	10.2	9.1*
COLVILLE RIVER							
Baird	17A06	3215	2/26	24	7.3	6.5	6.7
Carlson	18A09	2885		Discontinued		0.0	4.2
Chewelah	17A04	4925		Discontinued		13.1	14.3
Stranger Mountain	17A05	4990		Discontinued		10.4	12.5
Togo	18A10	3370		Discontinued		9.2	10.3

\# Average based on 1963-77 average
* Average for years of record

SNOW DATA TO MARCH 1, 1983 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
SPOKANE RIVER							
Above Burke	15B08	6100	2/28	40	15.4	18.1	22.9
Copper Ridge	16B02	4800	2/25	61	25.6	25.2	25.1
Forty-nine Meadows	15B03	5000	3/1	71	22.0	23.8	27.2
Fourth of July Summit	16B03	3100	2/28	17	5.4	6.4	8.9
Kellogg Peak	16B05A	5560	2/27	66	25.7	27.3	28.2
Lookout	15B02	5250	2/28	80	29.0	30.6	31.0
Lost Lake	15B14A	6000	3/1	132	41.4	49.7	50.0
Lower Sands Creek	16B01	3400	2/28	44	17.0	15.2	17.5
Mosquito Ridge	16A04A	5110	2/27	115	40.4	38.3	34.6
Roland Summit	15B05A	5200	2/27	71	31.5	30.0	31.3
Sherwin	16C01	3200	2/23	27	8.4	14.2	13.3
Sunset	15B09A	5600	2/27	101	35.5	39.1	32.6
NEWMAN LAKE							
Ragged Ridge	17B02	3333	2/27	10	2.8	2.6	New
OKANOGAN RIVER							
Aberdeen Lake	1F01A-Can	4300	2/28	30	7.6	7.4	6.0*
Blackwall Mountain	2G03-Can	6250	2/28	79	28.0	32.0	30.7*
Bouleau Lake	2F21-Can	4580	2/26	52	14.0	14.6	12.0*
Brenda Mine	2F18-Can	4800	2/25	38	13.0	11.1	12.2*
Brookmere	1C01-Can	3200	2/28	24	6.7	9.2	8.8*
Enderby	1F04-Can	6250	2/28	109	37.1	45.7	31.8*
Esperon Creek Lower	2F15-Can	4400	2/27	46	13.5	11.5	10.4*
Esperon Creek Middle	2F14-Can	4700	2/27	51	15.3	13.9	13.0*
Esperon Creek Upper	2F13-Can	5400	2/27	55	18.1	16.1	15.6*
Grayback Reservoir	2F08-Can	5225	2/25	33	8.9	5.8	7.8*
Graystoke Lake	2F04-Can	5950	3/1	45	13.9	12.0	14.1*
Hamilton Hill	2G06-Can	4900	2/25	35	10.6	12.2	14.1*
Harts Pass	20A05A	6500	2/25	116	39.3	40.7	41.1
Horseshoe Basin	19A05a	7000		Discontinued		16.8	16.3
Isintok Lake	2F11-Can	5510	2/26	24	5.5	7.1	7.4*
Lightning Lake	3D02-Can	4000	2/24	33	10.2	13.4	9.9*
Lost Horse Mountain	2G04-Can	6300	2/28	33	8.0	7.3	8.3*
Loup Loup	19A07	4650		Discontinued		9.8	8.8
McCulloch	2F03-Can	4200	2/28	24	6.8	7.0	6.3*
Missezula Mountain	2G05-Can	5100	2/23	29	7.9	8.7	8.8*
Mission Creek	2F05-Can	6000	3/1	60	18.8	18.9	17.0*
Monashee Pass	2E01-Can	4500	2/24	36	11.7	13.6	12.4*
Mount Kobau	2F12-Can	5950	2/27	50	13.5	12.1	10.6*
Muckamuck	19A09a	6390		Discontinued		18.6	14.7
Mutton Creek No. 1	19A01	5700	2/22	52	16.1	15.2	12.7
Mutton Creek No. 2SP	19A11	6000		Not Measured		7.8	10.0
Nickel Plate Mtn.	2G02-Can	6200	2/27	22	6.5	7.1	7.2*
Oyama Lake	2F19-Can	4400	2/27	30	8.0	6.3	6.3*

Average based on 1963-77 average
* Average for years of record

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
OKANOGAN RIVER (Cont.)							
Paysayten	20A28a	4300		Discontinued		16.5	16.9
Postill Lake	2F07-Can	4500	2/28	34	8.3	8.0	7.4*
Rusty Creek	19A03	4000	2/23	28	7.4	6.1	6.6
Salmon Meadows	19A02	4500	2/22	45	13.2	9.6	9.1
Silver Star Mountain	2F10-Can	6050	2/27	87	29.1	28.7	23.8*
Starvation Mountain	19A10a	6750		Discontinued		16.8	17.5
Summerland Reservoir	2F02-Can	4200	2/27	31	9.1	9.4	8.8*
Sunday Summit	2G01A-Can	4300	2/24	14	3.1	5.9	5.6*
Touts Coulee	19A06	2845		Discontinued		3.6	3.5
Trout Creek	2F01-Can	4700	2/26	22	6.5	6.8	6.5*
Vaseux Creek	2F20-Can	4600	2/28	30	7.5	6.0	6.0*
White Rocks Mountain	2F09-Can	6000	2/25	69	23.3	21.5	19.3*
METHOW RIVER							
Billy Goat Pass	20A10a	6409		Discontinued			31.3
Dollar Watch	20A29a	7000		Discontinued			27.0
Harts Pass	20A05A	6500	2/26	116	39.3	40.7	41.1
Horseshoe Basin	19A05a	7000		Discontinued		16.8	16.3
Loup Loup	19A07	4650		Discontinued		9.8	8.8
Mutton Creek No. 1	19A01	5700	2/22	52	16.1	15.2	12.7
Mutton Creek No. 2SP	19A11	6000		Not Measured		7.8	10.0
Rusty Creek	19A03	4000	2/23	28	7.4	6.1	6.6
Salmon Meadows	19A02	4500	2/22	45	13.2	9.6	9.1
War Creek Pass	20A31a	6500		Discontinued		39.6	42.9
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500		Not Measured		-	35.0
Greenwood Flat	20A25a	3540		Discontinued			20.8
Little Meadows +	20A24a	5275	3/4	94	37.6	53.4	37.6
Lyman Lake	20A23A	5900	3/4	145	59.0	63.7	49.8
Mirror Lake	20A39	5600	3/4	91	33.0	38.7	New
Park Creek Flat	20A13a	2220		Discontinued			31.5
Park Creek Ridge	20A12A	4600	3/4	112	45.5	59.7	44.2
Petersons	20A16a	3730		Discontinued			34.2
Rainy Pass	20A09	4780	2/27	95	33.0	39.6	37.0
Safety Harbor	20A30A	6300		Discontinued			26.6
War Creek Pass	20A31a	6500		Discontinued		39.6	42.9
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425		Discontinued		43.6	33.8
Brief	20B19	1600	2/28	22	7.0	9.0	7.5
Entiat Meadows +	20A33a	4540	3/5	126	44.7	45.5	57.7
Entiat River Trail +	20A34a	3325	3/5	68	23.1	24.9	25.6
Four Mile Ridge +	20B27a	6800		Discontinued		31.7	28.4
Fox Camp +	20A36a	6510	3/5	176	62.5	-	52.9

\+ Snow water equivalent estimated from aerial stadia observation
\# Average based on 1963-77 average
* Average for years of record

SNOW DATA TO MARCH 1, 1983 - APPENDIX 4

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
ENTIAT RIVER (Cont.)							
Pope Ridge	20B20	3540	2/28	57	19.3	20.6	18.2
Pugh Ridge +	20A32a	6725	3/5	107	38.0	36.0	40.8
Shady Pass	20A37	6200	2/28	80	28.2	30.4	23.7
Snow Brushy +	20A35a	3910	3/5	111	37.7	41.5	35.8
Tommy Creek +	20B21a	4900	2/27	76	27.0	25.1	26.5
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	2/28	60	23.7	31.0	26.0
Berne-Mill Creek New	21B41	3240	2/28	55	22.1	27.8	24.0
Blewett Pass No. 2	20B02	4270	3/2	52	15.5	16.4	15.0
Chiwaukum G.S.	20B16	1810	2/28	32	11.5	12.6	11.6
Fish Lake	21B04	3371		SNOTEL SITE		40.4	31.1
Lake Wenatchee	20B05	1970	2/28	32	11.3	16.5	14.4
Lyman Lake	20A23A	5900	3/4	145	59.0	63.7	49.8
Merritt	20B18	2140	2/28	31	12.0	18.2	15.8
Stevens Pass	21B01	4070	2/28	100	38.8	49.0	48.0
Stevens Pass Sand Shed	21B45	3700	2/28	72	28.6	38.4	34.9
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	2/24	29	9.5	6.3	8.1
Scout-A-Vista	20B04	3400	2/24	31	9.3	8.2	8.2
STEMILT CREEK							
Jump-Off	20B08	4450		Discontinued		9.2	8.4
Stemilt Slide	20B06	5000	2/24	51	16.0	13.3	13.1
Upper Wheeler	20B07	4400		SNOTEL SITE		8.6	9.7
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300		Discontinued		11.7	13.3
Colockum Creek Lower	20B23	4300		Discontinued		8.5	10.1
Trough # 2	20B25	5310	3/1	54	17.0	14.0	New
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	2/24	33	10.5	6.9	6.7
Big Boulder Creek	21B09	3200	3/1	47	17.8	25.1	19.3
Blewett Pass No. 2	20B02	4270	3/2	52	15.5	16.4	15.0
Bumping Lake	21C08	3450	2/11	58	15.4	8.8	14.8
			2/25	49	17.9	12.5	20.4
Bumping Lake New	21C36	3400	2/11	66	18.9	16.5	18.5
			2/25	59	19.5	17.8	20.2
Cayuse Pass	21C06	5300	3/3	-	81.0	86.9	71.0
Colockum Pass	20B09	5370	3/4	59	22.0	15.9	14.2

\+ Snow water equivalent estimated from aerial stadia observation
\# Average based on 1963-77 average

SNOW DATA TO MARCH 1, 1983 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
YAKIMA RIVER (Cont.)							
Cooke Creek	20B10	4123		Discontinued		4.5	5.7
Corral Pass	21B13	6000		SNOTEL SITE		-	35.1
Fish Lake	21B04	3371		SNOTEL SITE		40.4	31.1
Green Lake	21C10	6000	2/24	102	41.3	31.3	29.6
Grouse Camp	20B11	5385	3/4	65	26.0	18.9	15.5
High Creek	20B12	2930		Discontinued		6.1	6.1
Joe Lake	21B46a	4624		Discontinued		76.1	53.5
Lake Cle Elum	21B14	2200	2/14	17	6.6	11.6	10.5
			2/23	15	5.6	12.7	9.2
Lemah Creek	21B47a	3327		Discontinued		51.6	41.9
Manashtash	20C01	3935		Discontinued		4.3	4.3
Morse Lake	21C17	5400		SNOTEL SITE		57.7	47.2
Nanum	20B13	3875		Discontinued		5.6	9.8
Olallie Meadows	21B02	3625	2/28	58	24.1	44.1	44.8
Satus Pass	20D01	4030		Discontinued		7.4	9.1
Stampede Pass	21B10	3860	2/14	84	33.2	48.1	36.2
			2/28	82	34.8	51.4	35.7
Trail Creek	20B14	3360		Discontinued		0.0	2.6
Tunnel Avenue	21B08	2450	2/15	44	15.4	20.5	21.4
			2/28	39	15.4	24.9	21.6
Van Epps Pass	20B26a	5925		Discontinued		-	43.0
Walters Flat	20B15	3360		Discontinued		6.6	7.1
Waptus Lake	21B49a	3024		Discontinued		50.3	41.4
White Pass (E. Side)	21C28	4500	2/10	67	20.4	24.2	21.0
						25.7	23.1
AHTANUM CREEK							
Ahtanum R. S.	21C11	3100	2/24	33	10.5	6.9	6.7
Green Lake	21C10	6000	2/24	102	41.3	31.3	29.6
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700		Discontinued		22.9	22.6
MILL CREEK							
Homestead	17C01	4030		Discontinued		10.6	8.2
Martin Springs	17C02	4400		Discontinued		15.2	12.1
High Ridge	18D19	4150	2/28	72	24.7	36.1	29.4
KLICKITAT RIVER							
Satus Pass	20D01	4030		Discontinued		7.4	9.1

Average based on 1963-77 average

SNOW DATA TO MARCH 1, 1983 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
COWLITZ RIVER							
Cayuse Pass	21C06	5300	3/3	-	81.0	86.9	71.0
White Pass (E. Side)	21C28	4500	2/10	67	20.4	24.2	21.0
						25.7	23.1
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	3/3	-	81.0	86.9	71.0
Corral Pass	21B13	6000		SNOTEL SITE		-	35.1
Morse Lake	21C17	5400		SNOTEL SITE		57.7	47.2
GREEN RIVER							
Airstrip	21B24	1800	2/28	0	0.0	2.0	5.1
Charley Creek	21B25	1200	2/28	0	0.0	0.0	1.2
Cougar Mountain	21B42	3200		SNOTEL SITE		22.8	20.9
Grass Mtn. No. 2	21B27	2900	2/28	10	3.0	11.2	19.1
Grass Mtn. No. 3	21B28	2100	2/28	0	0.0	3.2	5.7
Lester Creek	21B29	3100	2/28	37	12.6	19.6	21.7
Lynn Lake	21B50	4000	2/28	18	5.8	22.7	18.7
Sawmill Ridge	21B31	4700	2/28	63	23.0	32.8	33.7
Snowshoe Butte	21B43	5000		Discontinued		54.8	52.7
Stampede Pass	21B10	3860	2/15	84	33.2	48.1	36.2
			2/28	82	34.8	51.4	35.7
Twin Camp	21B30	4100	2/28	50	18.2	28.8	22.3
CEDAR RIVER							
City Cabin	21B03	2390	2/24	0	0.0	14.1	17.2
Mt. Gardner	21B21	3300	2/24	12	5.7	20.1	18.7
SNOQUALMIE RIVER							
Alpine Meadow	21B48	3500	2/25	67	30.8	48.3	41.2
Olallie Meadows	21B02	3625	2/28	58	24.1	44.1	44.8
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	2/28	100	38.8	49.0	48.0
Stevens Pass Sand Shed	21B45	3700	2/28	72	28.6	38.4	34.9
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	2/26	31	10.9	16.7	14.9
Beaver Pass	21A01	3680	2/26	76	28.9	33.4	28.7
Brown Top Ridge +	21A28a	6000	2/26	140	50.6	58.2	61.2
Cloudy Pass +	20A22a	6500		Not Measured		-	35.0
Devils Park	20A04	5900	2/26	107	36.8	41.8	41.3

Average based on 1963-77 average
+ Snow water equivalent estimated from aerial stadia observation

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average #
SKAGIT RIVER (Cont.)							
Freezeout Creek Trail	20A01	3500	2/27	32	12.0	14.2	12.7
Freezeout Meadows New	20A38	5000	2/27	88	35.7	28.4	42.5
Granite Creek	21A29A	3500	2/27	49	17.0	18.8	19.2
Harts Pass	20A05A	6500	2/26	116	39.3	40.7	41.1
Klesilkwa	3D03A-Can	3700	2/25	23	8.1	-	12.0*
Lightning Lake	3D02-Can	4000	2/24	33	10.2	13.4	9.9*
Lyman Lake	20A23A	5900	3/4	145	59.0	63.7	49.8
Meadow Cabins	20A08	1900	2/26	2.9	1.2	8.1	7.4
New Hozomeen Lake	21A30	2800	2/27	28	10.0	11.3	14.2
New Tashme	3D01A-Can	2500	3/2	17	4.6	11.8	10.8
Rainy Pass	20A09	4780	2/27	95	33.0	39.6	37.0
Thunder Basin	20A07	4200	2/27	57	18.2	22.2	20.9
BAKER RIVER							
Dock Butte	21A11A	3800		Not Measured		70.0	64.2
Easy Pass	21A07A	5200		Not Measured		79.0	71.3
Jasper Pass	21A06A	5400		Not Measured		98.0	82.5
Marten Lake	21A09A	3600		Not Measured		80.0	71.8
Mount Blum +	21A18a	5800		Not Measured		74.0	62.1
Panorama New	21A26	4300		Not Measured		-	66.0
Rocky Creek	21A12A	2100		Not Measured		40.0	30.4
Schreibers Meadow	21A10A	3400		Not Measured		68.0	54.5
S. F. Thunder Creek	21A14A	2200		Not Measured		14.0	11.7
Watson Lakes	21A08A	4500		Not Measured		64.0	60.9
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	2/28	57	22.1	23.1	18.3
MORSE CREEK							
Cox Valley	23B14	4500	2/25	97	40.2	41.8	36.5
ELWHA RIVER							
Hurricane	23B03	4500	2/26	54	19.3	20.3	20.3

\+ Snow water equivalent estimated from aerial stadia observation
\# Average based on 1963-77 average
* Average for years of record

SNOTEL READINGS, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
PEND OREILLE RIVER							
Bunchgrass Meadow	17A01	5000	2/16		27.8	16.8	
			3/1		32.2	20.8	
		GT	2/25	89	32.3	(31.2)	
OKANOGAN & METHOW RIVERS							
Harts Pass	20A05	6500	2/15		33.3	-	
			3/1		38.8	-	
		GT	2/26	116	39.3	(38.0)	
Salmon Meadow	19A02	4500	2/15		-	10.3	
			3/1		28.0	13.9	
		GT	2/22	45	13.2	(-)	
CHELAN LAKE BASIN							
Lyman Lake	20A23	5900	2/15		44.4	-	
			3/1		54.2	-	
		GT	3/4	141	56.3	(55.1)	
Mirror Lake	20A39	5600	2/15		-	-	
			3/1		-	-	
		GT	3/4	93	34.5	(-)	
Park Creek Ridge	20A12	4600	2/16		36.0	42.3	
			2/28		41.2	47.9	
		GT	3/4	112	45.5	(-)	
Rainy Pass	20A09	4780	2/15		32.5	-	
			2/28		39.3	-	
		GT	2/27	95	33.0	(38.0)	
ENTIAT RIVER							
Pope Ridge	20B20	3450	2/15		16.5	18.6	
			3/1		18.7	19.7	
		GT	2/28		18.4	(18.4)	
WENATCHEE RIVER							
Blewett Pass	20B02	4270	2/15		17.2	17.1	
			3/1		19.1	18.2	
		GT	3/2	52	15.5	(19.3)	
Lyman Lake	20A23	5900	2/15		44.4	-	
			3/1		54.2		
		GT	3/4	141	56.3	(55.1)	
Stevens Pass	21B01	4070	2/15		20.7	33.7	
			3/1		22.7	34.0	
		GT	2/28	84	34.1	(22.7)	
Trough # 2	20B25	5310	2/15		16.5	12.1	
			2/28		21.1	15.6	
		GT	3/1	54	17.0	(-)	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth Measurement is SNOTEL reading on same date.

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average +
COLOCKUM CREEK							
Trough # 2	20B25	5310	2/15		16.5	12.1	
			2/28		21.1	15.6	
		GT	3/1	54	17.0	(-)	
STEMILT CREEK							
Upper Wheeler	20B07	4400	2/15		25.1	21.1	
			3/1		29.1	23.9	
		GT	3/2	51	14.5	(29.4)	
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	2/15		28.8	26.9	
			3/1		19.2	27.7	
		GT	3/1	53	19.6	(19.2)	
Bumping Ridge	21C38	4600	2/15		-	-	
			3/1		-	-	
Corral Pass	21B13	6000	2/15		25.7	34.9	
			3/1		28.6	38.5	
Fish Lake	21B04	3371	2/15		-	-	
			3/1		-	-	
		GT	3/1	73	31.0	(-)	
Green Lake	21C10	6000	2/15		23.5	21.2	
			3/1		26.8	24.2	
		GT	2/24	102	41.3	(26.2)	
Grouse Camp	20B11		2/15		18.1	-	
			3/1		21.6	-	
Morse Lake	21C17	5400	2/16		56.5	53.1	
			3/1		64.0	60.5	
White Pass (E.S.)	21C28	4500	2/15		21.0	25.1	
			3/1		24.7	26.5	
		GT	3/3	66	20.5	(24.9)	
AHTANUM CREEK							
Green Lake	21C10	6000	2/15		23.5	21.2	
			3/1		26.8	24.2	
		GT	2/24	102	41.3	(26.2)	
TOUCHET RIVER							
Touchet # 2	17C55	5530	2/15		27.0	41.0	
			3/1		31.6	44.9	
		GT	2/15	74	21.5	(27.0)	

GT = Ground Truth Measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
LEWIS RIVER							
June Lake	22C09	3200	2/15		30.0	31.2	
			3/1		30.9	25.5	
Lone Pine Shelter	21C26	3800	2/15		33.2	40.8	
			3/1		37.4	45.0	
Plains of Abraham	22C01	4400	2/15		-	-	
			3/1		-	-	
Sheep Canyon	22C10	4050	2/15		-	34.8	
			3/1		-	-	
Spencer Meadow	21C20	3400	2/15		26.6	-	
			3/1		28.7	-	
Surprise Lakes	21C13	4250	2/15		42.0	47.8	
			3/1		46.4	53.5	
COWLITZ RIVER							
Pigtail Peak	21C33	5900	2/15		39.8	-	
			3/1		44.9	52.1	
Potato Hill	21C14	4500	2/15		-	-	
			3/1		-	-	
Sheep Canyon	22C10	4050	2/15		-	34.8	
			3/1		-	-	
Strawberry Landing	22C08	3280	2/15		30.3	56.2	
			3/1		32.8	58.7	
NISQUALLY RIVER							
Paradise Park	21C35	5500	2/15		-	-	
			3/1		-	-	
WHITE RIVER							
Corral Pass	21B13	6000	2/15		25.7	34.9	
			3/1		28.6	38.5	
Morse Lake	21C17	5400	2/15		56.5	53.1	
			3/1		64.0	60.5	
GREEN RIVER							
Cougar Mtn.	21B42	3200	2/15		7.2	24.9	
			3/1		5.3	23.5	
Stampede Pass	21B10	3860	2/15		30.2	48.0	
			3/1		33.9	-	
		GT	3/2	78	33.8	(34.0)	
SNOQUALMIE RIVER							
Olallie Meadows East	21B55	3960	2/15		41.0	-	
			3/1		44.2	-	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
- Corps of Engineers

U. S. Department of Agriculture
- Forest Service

U. S. Department of Commerce
- NOAA, National Weather Service

U. S. Department of the Interior
- Bonneville Power Administration
- Bureau of Reclamation
- Geological Survey
- National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
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Agriculture

Soil
Conservation
Service

Spokane,
Washington

Water Supply Outlook for Washington

as of APRIL 1, 1983

in cooperation with

Department of Ecology
State of Washington

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TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: Fresh powder snow on Elephant Mountain, near the West Fork of Hyalite Creek, in Montana.

PUBLISHED BY SOIL CONSERVATION SERVICE

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Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

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Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
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DONALD W. MOOS

DIRECTOR

DEPARTMENT OF ECOLOGY

STATE OF WASHINGTON

Report prepared by

ROBERT T. DAVIS, Snow Survey Supervisor

NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201

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CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY
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Issued by

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Chief
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Waters Branch, 110-12 Avenue S.W., Calgary, Alberta

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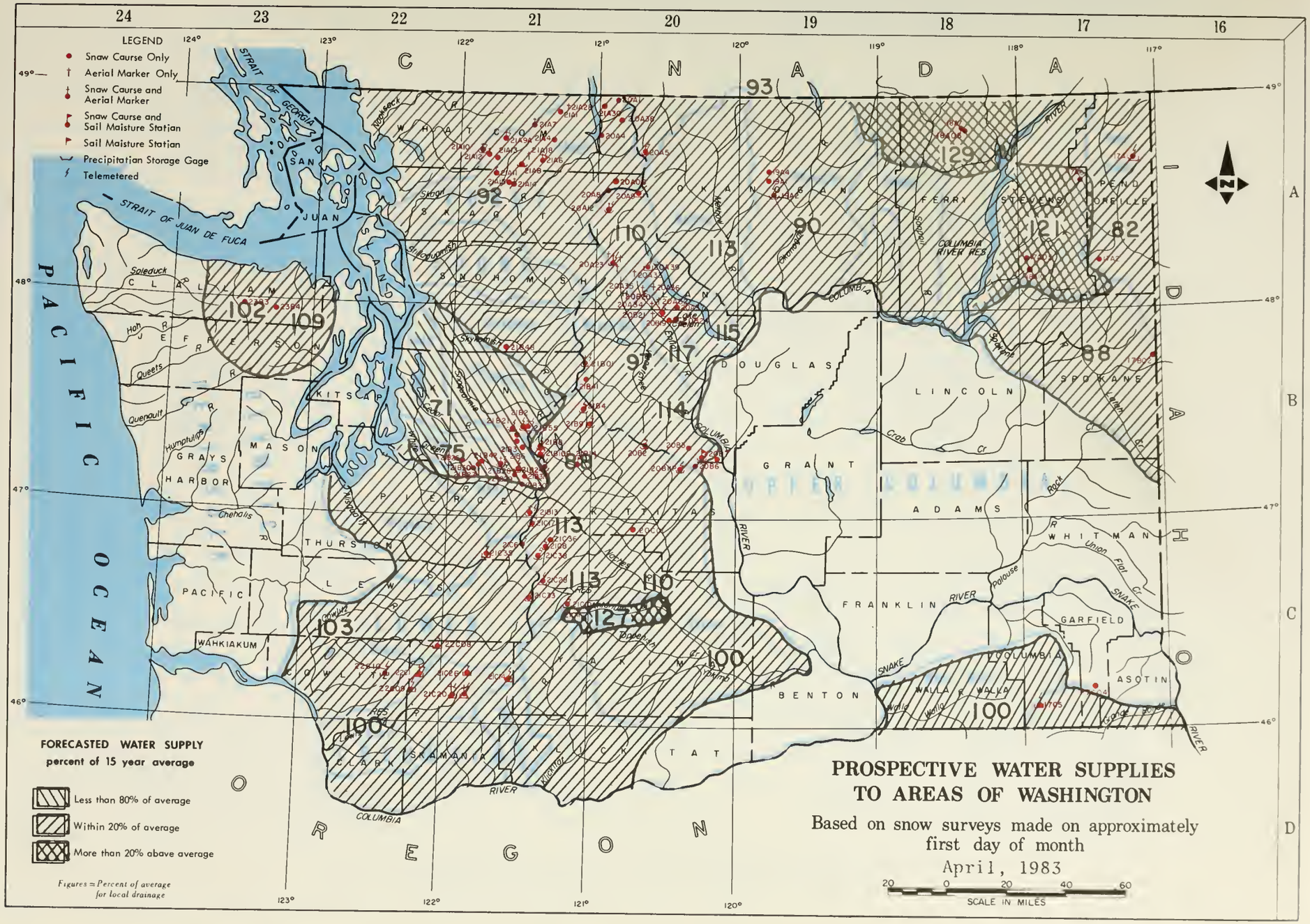
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Based on snow surveys made on approximately
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April, 1983
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Aerial Marker Only
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Soil Moisture Station
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Telemetered
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More than 20% above average
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STRAIT OF GEORGIA
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Rock Island Res
Wanapum Res
Priest Rapids Res
Chief Joseph Res
Grand Coulee Res
Flathead Res
Kootenay Res
Pend Oreille Res
Spokane Res
Lake Roosevelt
Lake Chelan
Lake Wenatchee
Lake Cle Elum
Lake Kachess
Lake Keechelus
Lake Tieton
Lake Cushman
Lake Quinault
Lake Ozette
Lake Washington
Lake Sammamish
Lake Union
Lake Tapeh
Lake Chelan
Lake Roosevelt
Lake Pend Oreille
Lake Coeur d'Alene
Lake Pend Oreille
Lake Chelan
Lake Roosevelt
Lake Pend Oreille
Lake Coeur d'Alene

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UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Kettle River					
Summit G. S.	18A7	20	39N	35E	4600
Spokane River					
Ragged Ridge	17802	12	27N	45E	3333
Calville River					
Baird	17A6	19	36N	42E	3215
Stranger Mountain	17A5	26	31N	38E	4990
Toga	18A10	6	29N	38E	3370
Okanogan River					
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Salmon Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Lake Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	1B	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	47B0
Mirror Lake	20A39	30	31N	1BE	5600
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	2B	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Fox Camp	20A36a	17	30N	1BE	6510
Pope Ridge	20B20	22	29N	18E	3540
Pape Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	1BE	6725
Shady Poss	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2 SP	35	22N	17E	4270
Stevens Pass	21B1SP	14	26N	13E	4070
Trough #2	20B25SP	10	20N	20E	5310
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Stemilt Creek					
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10 SP	3	12N	13E	6000
Grouse Camp	20B11 SP	29	21N	19E	5385
Lake Cle Elum	21B14M	15	20N	14E	2200
Morse Lake	21C17 SP	6	16N	11E	5400
Tunnel Avenue	21BBP	13	21N	11E	2450
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Tauchet No. 2	17C5SP	6	7N	40E	5530
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lane Pine Shelter	21C26SP	8	9N	7E	3800
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	BN	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	32B0

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Poradise Park (New)	21C35 SP	13	15N	8E	5500
White River					
Corral Pass	21B13 SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	BE	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	BE	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10 SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Snaquolmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
Olallie Meadows East	21B55SP	20	22N	11E	3700
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Pork	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	BE	3B00
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	BE	3600
Maunt Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	BE	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21ABP	25	37N	9E	4500

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Elwho River					
Hurricane	23B3	36	29N	7W	4500

LEGENO

21A7	Snow Coursa Only
21A7a	Aerial Marker Only
21A7A	Snow Coursa And Aerial Markar
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Pracipitation Storage Gage
21A7p	Precipitation Storaga Gage
21A7SP	Snow Pillow

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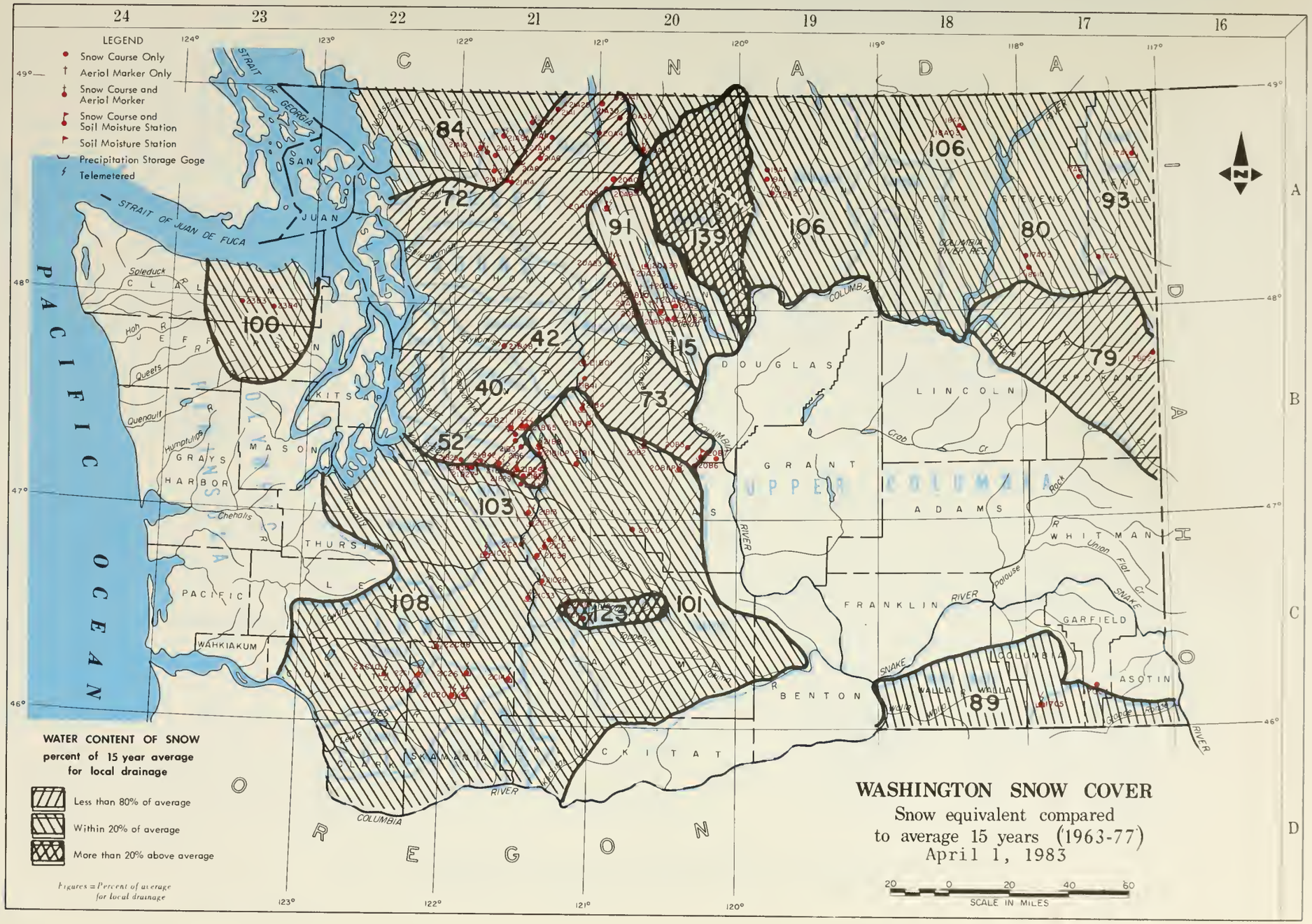

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UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Kettle River					
Summit G. S.	18A7	20	39N	35E	4600
Spakane River					
Ragged Ridge	17802	12	27N	45E	3333
Calville River					
Baird	17A6	19	36N	42E	3215
Stranger Mountain	17A5	26	31N	38E	4990
Tago	18A10	6	29N	38E	3370
Okanogan River					
Muttan Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Salmon Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Lake Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Mirrar Lake	20A39	30	31N	18E	5600
Entiat River					
Brief	20819	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Fox Camp	20A36a	17	30N	18E	6510
Pape Ridge	20820	22	29N	18E	3540
Pape Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	2082SP	35	22N	17E	4270
Stevens Pass	2181SP	14	26N	13E	4070
Trough #2	20825SP	10	20N	20E	5310
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Stemilt Creek					
Stemilt Slide	2086	30	21N	20E	5000
Upper Wheeler	2087SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	2189SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Fish Lake	2184SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20811SP	29	21N	19E	5385
Lake Cle Elum	21B14M	15	20N	14E	2200
Morse Lake	21C17SP	6	16N	11E	5400
Tunnel Avenue	21B8P	13	21N	11E	2450
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asatin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Touchet No. 2	17C5SP	6	7N	40E	5530
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lone Pine Shelter	21C26SP	8	9N	7E	3800
Plains of Abraham	22C1SP	35	9N	5E	4400
Spencer Meadow	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Potato Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	3280

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	2182P	19	22N	11E	3625
Olallie Meadows East	21B55SP	20	22N	11E	3700
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hazomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Josper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

April 1, 1983

Water supplies in Washington are expected to range from near average to above average over most of the state. Below average summer streamflow is forecast for Snohomish and King counties on the west side of the Cascades, while near average flows are expected in the rest of Washington. Precipitation was average to above average during March with some areas east of the Cascades receiving twice normal amounts. Reservoir storage is generally above normal for April 1.

SNOW COVER

The low elevation snowpack melt started last month in many areas due to warm temperatures and rain. This occurred on streams heading in the central Cascades, on the Skagit, Spokane, and Colville rivers and as a result, the snowpack on these watersheds is now below average. A near normal snow cover exists in the rest of Washington except for the Methow drainage which is above average.

PRECIPITATION

March brought ample precipitation to the state. Warmer than normal temperatures caused much of this to fall as rain with resultant runoff. Precipitation amounts were 105 to 120% of average west of the Cascades and 135 to 300% east of this mountain range. The Upper Columbia in Canada received 94% of average precipitation.

RESERVOIR STORAGE

Reservoir storage is mostly above average in the state. This is due to the better than average winter streamflow caused by the warm temperatures and good precipitation. The five principal Yakima reservoirs are storing amounts which are 116% of the April 1 average. Chelan Lake and Roosevelt Lake are at 1 1/2 times their normal levels for this time of year.

STREAMFLOW

Above average streamflow continued on Washington streams during March. This has occurred during most of the winter months. The flow for the Columbia at Grand Coulee was 170% of average and at The Dalles, 181%. Many rivers and streams produced 1 1/2 to 2 times normal flows during the month. West side streamflow was closer to average as the Green was 101%; the Skykomish, 124%; and the Cowlitz, 121%. Forecasts of spring and summer streamflow are generally near average to above average. Exceptions are west side streams heading in the Cascades which will be below average because of the poor snowpack.

STREAMFLOW FORECASTS - April, 1983

The following summarized runoff forecasts are based principally on mountain snowcover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify the streamflow. The forecasts are a cooperative effort of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1982 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1983	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Forecast period	1982	1981	1980	15-Yr. Average 63-77
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM							
Columbia River	45000	99	Apr-Sept		48531	40810	45510
at Birchbank 1/	36000	99	Apr-July		38501	34081	36358
	25935	99	Apr-June		27002	27618	26197
Columbia River	67900	100	Apr-Sept		70303	61016	68026
at Grand Coulee 1/	56600	99	Apr-July		58525	52320	57050
	43840	99	Apr-June		44235	43871	44280
Columbia River	75000	101	Apr-Sept		77308	66512	73911
bl. Rock Island Dam 1/	62900	101	Apr-July		64689	57767	62444
	48965	101	Apr-June		49348	48667	48479
Columbia River	107000	103	Apr-Sept		96188	91737	103477
at The Dalles, OR 1/	90600	102	Apr-July		81125	79919	88503
	72645	102	Apr-June		63521	68304	71219
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	12900	82	Apr-Sept		13896	13271	15643
bl. Box Canyon	11800	82	Apr-July		13179	12116	14334
	10070	82	Apr-June		11594	10776	12277
KETTLE RIVER SYSTEM							
Kettle River	2387	129	Apr-Sept		2184	1835	1845
nr. Laurier	2269	129	Apr-July		2013	1747	1753
	2047	129	Apr-June		1657	1603	1587
Colville River	162	121	Apr-Sept		125	116	134
at Kettle Falls	148	121	Apr-July		111	105	123
	139	121	Apr-June		94	97	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
SPOKANE RIVER SYSTEM **							
Spokane River	2570	88	Apr-Sept		2238	2214	2910
at Post Falls, ID 2/	2470	88	Apr-July		2145	2046	2733
	2288	88	Apr-June		1960	1904	2600
OKANOGAN RIVER SYSTEM							
Similkameen River	1410	93	Apr-Sept		1241	1479	1517
nr. Nighthawk	1320	93	Apr-July		1118	1391	1417
	1110	93	Apr-June		930	1247	1192
Okanogan River	1540	90	Apr-Sept		1631	1551	1718
nr. Tonasket	1400	89	Apr-July		1416	1423	1564
	1160	89	Apr-June		1107	1240	1304
METHOW RIVER SYSTEM							
Methow River	1140	113	Apr-Sept		786	996	1011
nr. Pateros	1049	112	Apr-July		724	934	937
	886	112	Apr-June		602	811	791
CHELAN RIVER SYSTEM							
Chelan River	1422	115	Apr-Sept		916	1120	1238
at Chelan 3/	1242	115	Apr-July		798	1020	1080
	959	115	Apr-June		621	859	834
Stehekin River	969	110	Apr-Sept		662		883
at Stehekin	852	114	Apr-July		543		744
	635	114	Apr-June		403		557
Entiat River	282	117	Apr-Sept		186	216	241
nr. Ardenvoir	257	118	Apr-July		168	200	218
	209	120	Apr-June		137	172	174
WENATCHEE RIVER SYSTEM							
Wenatchee River	1263	97	Apr-Sept				1297
at Plain	1187	103	Apr-July				1156
	966	107	Apr-June				903
Wenatchee River	2010	114	Apr-Sept		1188	1516	1767
at Peshastin	1800	113	Apr-July		1075	1399	1586
	1412	113	Apr-June		869	1208	1250
Stemilt Basin nr. Wenatchee	134*	97	May-Sept				138*
Icicle Creek	369	100	Apr-Sept				371
nr. Leavenworth	349	102	Apr-July				342
	290	104	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by Jerry Beard, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Fore cast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
YAKIMA RIVER SYSTEM							
Yakima River	127	88	Apr-Sept		95	115	144
nr. Martin 4/	118	89	Apr-July		82	103	133
	103	90	Apr-June		73	95	114
Yakima River	868	89	Apr-Sept		700	792	975
at Cle Elum 5/	793	90	Apr-July		643	716	882
	680	91	Apr-June		563	646	750
Yakima River	2168	100	Apr-Sept		1194	1833	2168
nr. Parker 6/	1954	100	Apr-July		1059	1733	1954
	1693	100	Apr-June		961	1610	1693
Kachess River	115	91	Apr-Sept		81	111	126
nr. Easton 7/	111	93	Apr-July		72	105	119
	98	95	Apr-June		66	91	103
Cle Elum River	449	94	Apr-Sept		313	-	479
nr. Roslyn 8/	406	93	Apr-July		282	350	435
	339	95	Apr-June		244	314	358
Bumping River	165	113	Apr-Sept		78	129	146
nr. Nile 9/	149	113	Apr-July		70	120	132
	120	113	Apr-June		63	111	106
American River	140	110	Apr-Sept	140	63	121	127
nr. Nile	129	111	Apr-July	130	58	105	116
	106	111	Apr-June	109	51	114	95
Tieton River	285	113	Apr-Sept		148	224	252
at Tieton Dam 10/	240	113	Apr-July		131	192	212
	190	113	Apr-June		108	166	168
Naches River	982	110	Apr-Sept		419	729	893
nr. Naches 11/	895	111	Apr-July		380	694	806
	768	113	Apr-June		339	638	678
Ahtanum Creek	59	127	Apr-Sept				47
nr. Tampico 12/	55	131	Apr-July				42
	50	135	Apr-June				37

4/ Observed flow corrected for storage in Lake Keechelus.
5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.
6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.
7/ Observed flow corrected for storage in Lake Kachess.
8/ Observed flow corrected for storage in Lake Cle Elum.
9/ Observed flow corrected for storage in Bumping Lake.
10/ Observed flow corrected for storage in Rimrock Lake.
11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.
12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr.	Fore cast	1982	1981	1980	15-yr. Average 63-77
				Seasonal Streamflow in Thousands of Acre-Feet			
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	17.5	100	Apr-Sept	24.62		11.65	17.50
at Walla Walla	17.3	100	Apr-July	24.48		11.64	17.33
	17.2	100	Apr-June	21.63		11.64	17.15
Lewis River	1298	100	Apr-Sept		1096	1001	1298
at Ariel 13/	1128	100	Apr-July		971	883	1128
	992	100	Apr-June		865	798	992
Cowlitz River	2010	95	Apr-Sept			1626	2126
bl. Mayfield Dam	1750	94	Apr-July			1432	1854
	1460	94	Apr-June			1275	1553
Cowlitz River	2840	103	Apr-Sept		2390	1976	2766
at Castle Rock	2460	102	Apr-July		2125	1852	2401
	2070	102	Apr-June		1875	1649	2029
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	174	109	Apr-Sept				160
nr. Sequim	143	110	Apr-July				130
	106	110	Apr-June				96
ELWHA RIVER SYSTEM							
Elwha River	566	102	Apr-Sept				553
nr. Port Angeles	465	102	Apr-July				454
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	2010	91	Apr-Aug.				2212
at Newhalem 15/	2166	92	Apr-Sept				2356
	1804	91	Apr-July				1972
	1291	87	Apr-June				1485
GREEN RIVER SYSTEM							
Green River	238	75	Apr-Sept				316
bl. Howard Hanson Dam 16/	216	76	Apr-July				284
	196	77	Apr-June				256
CEDAR RIVER SYSTEM							
Cedar River	66	71	Apr-Sept				93
nr. Cedar Falls	61	72	Apr-July				84
	55	75	Apr-June				73

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1983, as percent of the same date in 1982 and 1981 and average of record.

Tributary Basin	No. of Courses Average	1983 Snow Water Expressed as percent of 1982	1981	1963-77 Avg.
		UPPER COLUMBIA BASIN		
Pend Oreille	16	88	212	93
Kettle	11	102	168	106
Colville	1	94	-	80
Spokane	13	82	300	79
Okanogan	33	96	198	106
Methow	4	123	226	139
Chelan	5	86	172	91
Entiat	8	104	252	115
Wenatchee	9	71	287	73
Yakima	15	95	334	101
Ahtanum	2	122	236	123
		LOWER COLUMBIA BASIN		
Mill Creek	1	68	168	89
Cowlitz	2	102	353	108
		PUGET SOUND		
White	3	95	219	103
Green	5	49	398	52
Snoqualmie	1	41	242	40
Skykomish	2	75	345	42
Skagit	13	75	494	72
Baker	8	78	-	84
		OLYMPIC PENINSULA		
Morse Creek	1	96	415	103
Elwha	1	89	804	84
Dungeness	1	103	400	112

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured April 1 1983	1982	1981	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	163.3	166.7	170.4	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	1864.1	1094.0	4224.7	1260.0
Columbia	Banks Lake	714.9	690.9	682.9	685.5	590.8
Okanogan	Conconully Reservoir	13.0	11.2	10.7	8.6	7.2
Okanogan	Conconully Lake	10.5	10.4	9.1	10.4	7.5
Chelan	Lake Chelan	676.1	262.4	208.3	408.9	184.6
		YAKIMA				
Yakima	Keechelus Lake	157.8	122.3	142.5	156.9	108.8
Kachess	Kachess Lake	239.0	223.3	203.6	217.2	189.8
Cle Elum	Lake Cle Elum	436.9	364.4	148.5	304.2	292.1
Bumping	Bumping Lake	33.7	7.0	5.9	33.1	8.6
Tieton	Rimrock Lake	198.0	145.3	157.2	197.3	142.2
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	712.9	701.5	1188.8	754.4
Skagit	Diablo Reservoir	90.6	88.0	86.1	87.5	85.7
Skagit	Gorge Reservoir	9.8	8.4	7.8	8.3	8.0

1/ Based on Active Storage

* 15-yr. Average 1963-77

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1982 2/ Observed	Departure	WINTER Nov. 1982 - Mar. 1983 2/ Observed	Departure
Columbia in Canada	5.40	+0.38	13.08	-2.43
Pend Oreille - Spokane	4.85	+0.81	18.97	+1.42
Northeastern Washington	2.73	+0.25	14.10	+4.70
Southeastern Washington	4.19	+1.68	12.11	+1.68
East Slope Cascades	6.27	+1.52	8.27	+2.99
North Central Washington	2.35	+0.76	9.02	+2.48
Northwest Slope Cascades	12.32	-0.89	52.37	-3.02
Southwest Slope Cascades	10.16	+1.48	44.41	+2.77

Northeastern Washington - Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon, and Palouse Drainages.

East Slope Cascades - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

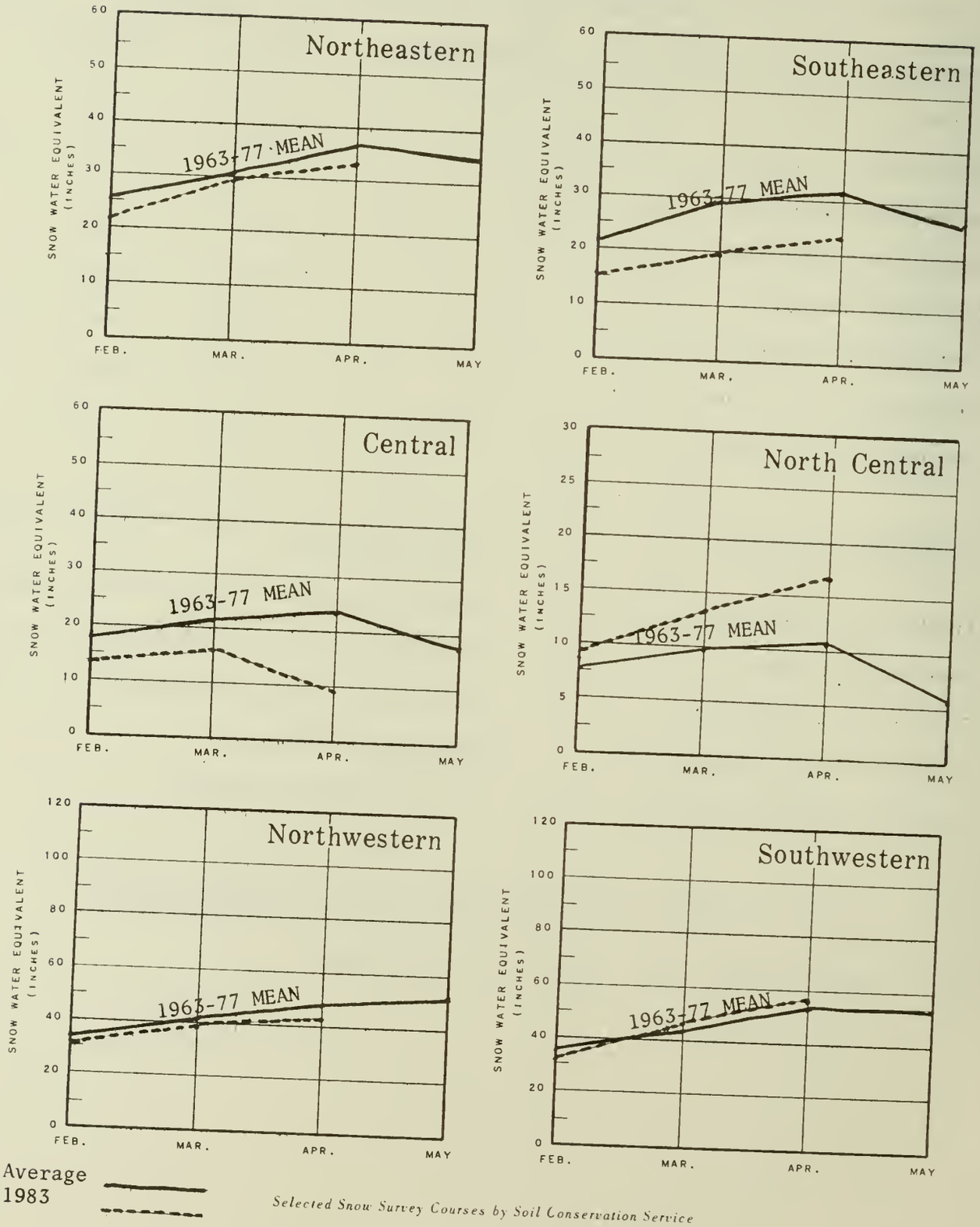
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1983

DRAINAGE AREAS



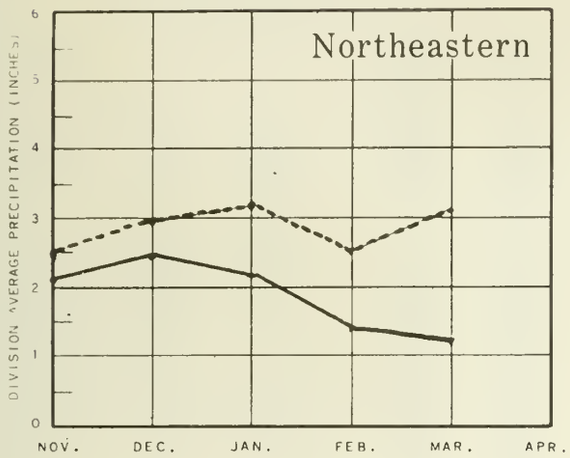
Selected Snow Survey Courses by Soil Conservation Service

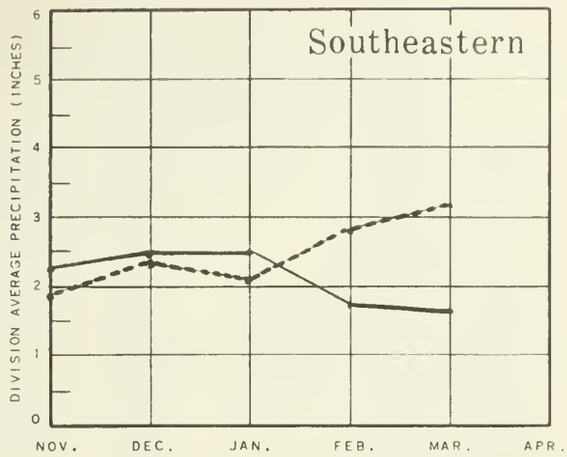
M7-L-22028G

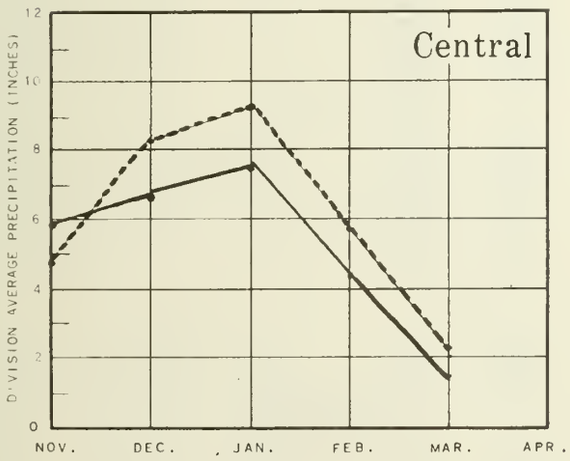
WASHINGTON VALLEY PRECIPITATION

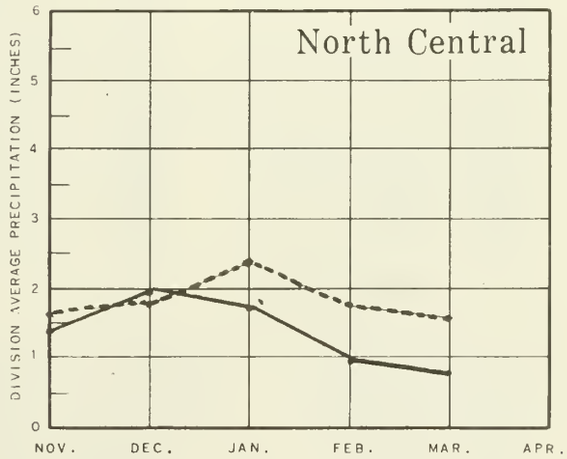
1983

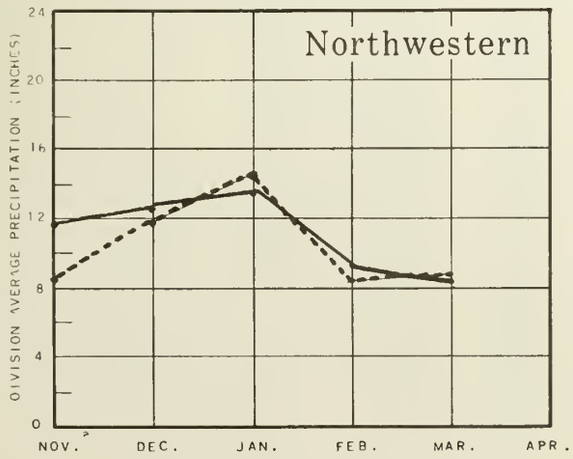
DRAINAGE AREAS

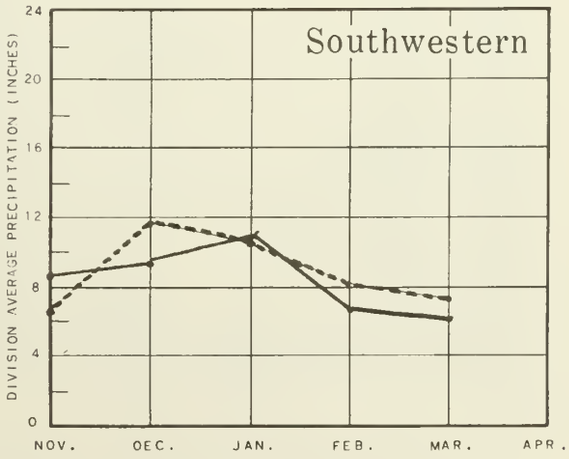












Average ———
1983 - - - - -

Preliminary Analysis by National Weather Service

SNOW DATA TO APRIL 1, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	4/1	116	45.8	49.5	50.3
Baree Midway	15B16	4600	3/31	95	37.6	39.5	38.8
Baree Trail	15B15	3800	4/1	9	3.6	9.2	9.8
Benton Meadow	16A02	2344	4/1	0	0.0	0.0	5.0
Benton Spring	16A03	4900	4/1	55	22.0	18.9	20.2
Boyer Mountain	17A02	5250	3/28	78	29.8	25.4	27.2
Brush Creek Timber	14A13	5000	4/1	29	8.8	11.0	10.6
Bunchgrass Meadow	17A01	5000	3/31	98	27.1	33.0	30.7
Chewelah	17A04	4923		Discontinued		14.6	17.0
Heart Lake Trail	14C10	4800	3/29	38	15.4	24.2	23.8
Hoodoo Basin	15C10	6000	3/29	109	46.2	65.0	53.6
Hoodoo Creek	15C01	5900	3/29	100	41.4	58.5	49.9
Lookout	15B02	5250	3/17	76	29.0	35.0	38.6
			3/31	90	33.0	37.6	37.1
Mosquito Ridge	16A04A	5100	4/1	108	42.6	41.8	40.2
Nelson	2D04-Can	3050		Late Report		16.6	15.5*
Schweitzer Bowl	16A06	4500	3/31	97	40.1	38.6	30.9
Schweitzer Ridge	16A05	6100	3/31	137	57.1	54.5	47.8
Smith Creek	16A01	4800	3/30	122	51.8	52.8	48.8
Winchester Creek	17A03	2970		Discontinued		7.5	11.2
KETTLE RIVER							
Barnes Creek	2B06-Can	5300	3/28	54	18.9	22.1	20.7*
Big White Mtn.	2E03-Can	5500	3/29	70	24.5	21.7	20.3*
Bluejoint Mtn.	2E06-Can	7500		Not Measured		33.6	25.9*
Boulder Road	18A02	1450		Discontinued		0.0	2.4
Butte Creek	18A03	4070	4/1	33	10.7	8.6	9.5
Cabin Creek	18A08	2170		Discontinued		8.3	8.3
Carmi	2E02-Can	4100	3/31	20	6.5	6.7	6.4*
Farron # 1	2B02-Can	4000	3/30	48	18.8	13.7	13.2*
Farron # 2	2B02A-Can	4000	3/30	46	17.9	14.6	13.0*
Goat Creek	18A04	3595		Discontinued		4.0	5.3
Graystoke Lake	2F04-Can	5950	3/30	50	16.2	18.2	18.4*
Monashee Pass	2E01-Can	4500	3/28	37	12.9	15.6	14.0*
Old Glory Mountain	2B03-Can	7000		Not Measured		30.6	28.8*
Snow Caps Creek	18A05	2150		Discontinued		0.0	2.2
Snow Caps Trail	18A06	2720		Discontinued		4.2	4.9
Summit G.S.	18A07	4600	4/1	29	9.1	8.0	8.5
Trapping Creek Lower	2E05-Can	3050	3/29	8	2.4	4.3	3.7*
Trapping Creek Upper	2E04-Can	4450	3/29	32	10.7	10.9	10.0*

\# Average based on 1963-77 Average
* Average for years of record

SNOW DATA TO APRIL 1, 1983 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
COLVILLE RIVER							
Baird	17A06	3215	3/29	10	4.5	4.8	5.6
Carlson	18A09	2885		Discontinued		0.0	2.6
Chewelah	17A04	4925		Discontinued		14.6	17.0
Stranger Mountain	17A05	4990		Discontinued		10.5	14.5
Togo	18A10	3370		Discontinued		8.8	12.9
SPOKANE RIVER							
Above Burke	15B08	6100	3/31	41	15.4	21.4	24.7
Above Roland	15B07	4350	4/1	69	29.8	35.8	35.2
Below Roland	15B06	3770		Not Measured		14.1	16.5
Copper Ridge	16B02	4800	3/31	60	24.7	26.6	29.7
Forty-nine Meadows	15B03	5000	3/31	77	24.4	28.6	32.5
Fourth of July Summit	16B03	3100	3/15	0	0.0	5.5	-
			4/1	0	0.0	3.2	8.8
Granite Peak	15B13A	6000	3/31	127	37.8	44.2	46.8
Kellogg Peak	16B05A	5560	4/1	82	30.0	36.2	35.4
Lookout	15B02	5250	3/17	76	29.0	35.0	38.6
			3/31	90	33.0	37.6	37.1
Lost Lake	15B14A	6000	3/31	152	49.8	57.5	61.8
Lower Sands Creek	16B01	3400	4/1	39	16.9	16.4	21.9
Mosquito Ridge	16A04A	5110	4/1	108	42.6	41.8	40.2
Roland Summit	15B05A	5200	4/1	98	39.0	46.4	40.1
Sherwin	16C01	3200	3/28	10	3.6	15.1	13.8
Sunset	15B09A	5600	4/1	79	28.4	37.0	36.2
NEWMAN LAKE							
Ragged Ridge	17B02	3333	3/26	0	0.0	2.6	New
OKANOGAN RIVER							
Aberdeen Lake	1F01A-Can	4300	3/30	22	7.6	8.5	6.1*
Blackwall Mountain	2G03-Can	6250				35.1	34.4*
Bouleau Lake	2F21-Can	4580	3/27	56	16.8	16.1	15.2*
Brenda Mine	2F18-Can	4800	3/30	42	13.4	13.9	13.5*
Brookmere	1C01-Can	3200	3/31	25	7.4	7.5	9.4*
Enderby	1F04-Can	6250	3/28	113	43.7	50.9	39.3*
Esperon Creek Lower	2F15-Can	4400	3/31	46	15.4	13.8	11.9*
Esperon Creek Middle	2F14-Can	4700	3/31	55	18.5	16.6	15.2*
Esperon Creek Upper	2F13-Can	5400	3/31	63	21.9	18.6	18.5*
Freezeout Mdw New	20A38	5000	3/29	87	37.7	30.7	41.0
Grayback Res.	2F08-Can	5225	3/28	41	11.5	12.4	9.3*
Graystoke Lake	2F04-Can	5950	3/30	50	16.2	18.2	18.4*
Hamilton Hill	2G06-Can	4900	3/30	39	12.2	16.7	15.6*
Harts Pass	20A05A	6500	3/28	119	42.2	45.1	48.5
Horseshoe Basin	19A05a	7000		Discontinued		-	19.4

Average based on 1963-77 average
* Average for years of record

SNOW DATA TO APRIL 1, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
OKANOGAN RIVER (Cont.)							
Isintok Lake	2F11-Can	5510	3/27	28	7.5	8.1	8.0*
Lightning Lake	3D02-Can	4000	3/29	31	10.2	15.1	14.3*
Lost Horse Mountain	2G04-Can	6300	4/5	33	7.4	-	9.4*
Loup Loup	19A07	4650		Discontinued		10.4	9.2
McCulloch	2F03-Can	4200	4/1	21	3.9	7.8	6.7*
Missezula Mountain	2G05-Can	5100	3/28	27	8.7	11.1	9.1*
Mission Creek	2F05-Can	6000	3/30	66	21.4	22.8	20.2*
Monashee Pass	2E01-Can	4500	3/28	37	12.9	15.6	14.0*
Mount Kobau	2F12-Can	5950	3/27	61	18.1	13.6	12.6*
Muckamuck +	19A09a	6390		Discontinued		-	17.9
Mutton Creek No. 1	19A01	5700	3/30	70	24.5	15.6	14.7
Mutton Creek No. 2SP	19A11	6000	3/30	-	17.6	18.6	13.0
Nickel Plate Mtn.	2G02-Can	6200	3/28	26	7.6	9.4	8.2*
Oyama Lake	2F19-Can	4400	3/31	26	8.5	8.5	7.1*
Paysayten +	20A28a	4300		Discontinued		-	18.7
Postill	2F07-Can	4500	3/31	32	10.1	10.1	9.1*
Rusty Creek	19A03	4000		Not Measured		6.0	6.6
Salmon Meadows	19A02	4500	3/30	49	16.6	11.7	10.3
Silver Star Mountain	2F10-Can	6050	3/29	91	34.6	35.2	28.5*
Starvation Mtn.	19A10a	6750		Discontinued		-	20.7
Summerland Reservoir	2F02-Can	4200	3/27	30	9.8	9.5	9.3*
Sunday Summit	2G01A-Can	4300	3/29	4	1.6	6.7	5.0*
Touts Coulee	19A06	2845		Discontinued		1.9	1.8
Trout Creek	2F01-Can	4700	3/28	19	5.8	7.4	7.5*
Vaseux Creek	2F20-Can	4600	3/29	32	9.0	8.7	6.7*
White Rocks Mountain	2F09-Can	6000	4/4	79	30.2	25.5	23.1*
METHOW RIVER							
Billy Goat Pass	20A10a	6409		Discontinued		-	38.0
Dollar Watch	20A29a	7000		Discontinued		-	31.9
Harts Pass	20A05A	6500	3/28	119	42.2	45.1	48.5
Horseshoe Basin	19A05a	7000		Discontinued		-	19.4
Loup Loup	19A07	4650		Discontinued		10.4	9.2
Mutton Creek No. 1	19A01	5700	3/30	70	24.5	15.6	14.7
Mutton Creek No. 2 SP	19A11	6000	3/30	-	17.6	18.6	13.0
Rusty Creek	19A03	4000		Not Measured		6.0	6.6
Salmon Meadows	19A02	4500	3/30	49	17.0	11.7	10.3
War Creek Pass	20A31a	6500		Discontinued		-	44.4
CHELAN LAKE BASIN							
Cloudy Pass	20A22a	6500		Marker Down		-	49.8
Little Meadows +	20A24a	5275	3/28	118	47.2	57.7	49.0
Lyman Lake	20A23A	5900	3/28	152	61.3	65.9	65.5
Mirror Lake	20A39	5600	3/28	99	36.9	45.1	New
Park Creek Ridge	20A12A	4600	3/28	103	43.7	49.8	47.0
Rainy Pass	20A09	4780	3/29	101	35.4	42.0	43.7

Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO APRIL 1, 1983 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425		Discontinued		47.6	43.5
Brief	20B19	1600	3/28	0	0.0	0.0	4.6
Entiat Meadows +	20A33a	4540	4/4	148	59.2	49.1	49.3
Entiat River Trail +	20A34a	3325	4/4	50	21.0	24.1	18.2
Four Mile Ridge +	20B27a	6800		Discontinued		38.2	37.8
Fox Camp +	20A36a	6510	4/4	204	81.6	61.6	57.8
Pope Ridge	20B20	3540	3/28	45	18.7	22.5	18.9
Pugh Ridge +	20A32a	6725	4/4	121	48.4	41.7	37.5
Shady Pass	20A37	6200	3/28	84	33.3	33.9	32.9
Snow Brushy +	20A35a	3910	4/4	103	41.2	47.7	40.3
Tommy Creek +	20B21a	4900	4/4	76	30.4	28.5	27.3
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	3/30	56	23.4	32.0	29.8
Berne-Mill Creek New	21B41	3240	3/30	47	20.1	28.5	28.3
Blewett Pass No. 2	20B02	4270	3/29	48	15.9	14.9	16.9
Chiwaukum G.S.	20B16	1810	3/30	19	8.0	11.6	10.2
Fish Lake	21B04	3371		SNOTEL		39.9	35.3
Lake Wenatchee	20B05	1970	3/30	16	6.4	15.6	12.9
Leavenworth R.S.	20B17	1127		Discontinued		0.0	0.6
Lyman Lake	20A23A	5900	3/28	152	61.3	65.9	65.5
Merritt	20B18	2140	3/30	16	5.9	17.5	15.5
Stevens Pass	21B01	4070	3/30	106	42.8	56.8	54.9
Stevens Pass Sand Shed	21B45	3700	3/30	76	30.4	40.6	39.5
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	3/30	29	10.4	5.8	7.9
Scout-A-Vista	20B04	3400	3/30	18	7.2	6.7	7.3
STEMILT CREEK							
Jump-Off	20B08	4450		Discontinued		8.6	8.2
Stemilt Slide	20B06	5000	3/30	61	21.4	15.0	13.7
Upper Wheeler	20B07	4400		SNOTEL		5.1	8.7
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300		Discontinued		12.1	15.1
Colockum Creek Lower	20B23	4300		Discontinued		6.5	9.9
Trough # 2	20B25	5310		SNOTEL		15.5	New
YAKIMA RIVER							
Ahtanum R. S.	21C11	3100	3/25	19	7.0	4.6	6.0
Big Boulder Creek	21B09	3200	3/28	28	12.2	24.8	20.1
Blewett Pass No. 2	20B02	4270	3/29	48	15.9	14.9	16.9
Bumping Lake	21C08	3450	3/15	40	15.8	13.2	17.1
			3/31	42	15.2	13.3	16.5
Bumping Lake New	21C36	3400	3/15	50	20.4	18.8	22.0
			3/31	52	20.0	18.5	21.7

Average based on 1963-77 average

+ Snow water equivalent estimated from aerial stadia observation.

SNOW DATA TO APRIL 1, 1983 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
YAKIMA RIVER (Cont.)							
Cayuse Pass	21C06	5300	4/6	231	99.2	89.0	90.3
Colockum Pass	20B09	5370	3/30	70	26.4	19.7	16.6
Cooke Creek	20B10	4123		Discontinued		0.0	5.1
Corral Pass	21B13	6000	3/31	105	36.5	51.5	43.4
Fish Lake	21B04	3371		SNOTEL		39.9	35.3
Green Lake	21C10	6000	3/24	101	44.9	48.2	34.9
Grouse Camp	20B11	5385	3/29	84	30.4	20.7	16.6
High Creek	20B12	2930		Discontinued		0.0	3.6
Joe Lake	21B46a	4624		Discontinued		88.6	70.6
Lake Cle Elum	21B14M	2200	3/10	0	0.0	10.9	10.0
			3/31	0	0.0	7.1	6.7
Lemah Creek	21B47a	3327		Discontinued		53.4	46.6
Manashtash	20C01	3935		Discontinued		1.0	3.0
Morse Lake	21C17	5400	3/31	185	67.8	65.9	59.6
Nanum	20B13	3875		Discontinued		5.9	8.2
Olallie Meadows	21B02	3625	4/2	55	20.7	50.0	51.9
Satus Pass	20D01	4030		Discontinued		4.0	9.6
Stampede Pass SP	21B10	3860	3/14	67	30.8	54.4	41.5
			4/4	87	39.4	60.6	43.9
Trail Creek	20B14	3360		Discontinued		0.0	0.0
Tunnel Avenue	21B08	2450	3/11	32	12.4	24.4	25.9
			3/29	26	9.4	25.3	24.6
Van Epps Pass	20B26a	5925		Discontinued		74.3	57.5
Walters Flat	20B15	3360		Discontinued		4.1	5.5
Waptus Lake	21B49a	3024		Discontinued		55.0	44.5
White Pass (E. Side)	21C28	4500	3/14	67	26.4	28.2	25.1
			3/30	76	27.5	29.8	26.0
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	3/25	19	7.0	4.6	6.0
Green Lake	21C10	6000	3/24	101	44.9	48.2	34.9
LOWER COLUMBIA DRAINAGES							
MILL CREEK							
Homestead	17C01	4030		Discontinued		11.9	8.9
Martin Springs	17C02	4400		Discontinued		17.9	14.9
High Ridge	18D19	4150	3/30	76	28.9	42.9	32.3
COWLITZ RIVER							
Cayuse Pass	21C06	5300	4/6	231	99.2	89.0	90.3
White Pass (E. Side)	21C28	4500	3/14	67	26.4	28.2	25.1
			3/30	76	27.5	29.8	26.0
PUGET SOUND DRAINAGE							
WHITE RIVER							
Cayuse Pass	21C06	5300	4/6	231	99.2	89.0	90.3
Corral Pass	21B13	6000	3/31	105	36.5	51.5	43.4
Morse Lake	21C17	5400	3/31	185	67.8	65.9	59.6

Average based on 1963-77 average

SNOW DATA TO APRIL 1, 1983 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
GREEN RIVER							
Airstrip	21B24	1800	3/30	0	0.0	0.0	2.1
Charley Creek	21B25	1200	3/30	0	0.0	0.0	0.0
Cougar Mountain	21B42	3200		SNOTEL		25.7	25.1
Grass Mtn. No. 2	21B27	2900	3/30	0	0.0	12.0	24.3
Grass Mtn. No. 3	21B28	2100	3/30	0	0.0	0.0	4.9
Lester Creek	21B29	3100	3/30	29	10.4	22.6	27.5
Lynn Lake	21B50	4000	3/30	7	1.5	25.7	29.8
Sawmill Ridge	21B31	4700	3/30	69	24.6	36.8	41.6
Snowshoe Butte	21B43	5000		Discontinued		62.5	59.8
Stampede Pass	21B10	3860	3/14	67	30.8	54.4	41.5
			4/4	87	39.4	60.6	43.9
Twin Camp	21B30	4100	3/30	47	18.1	30.0	27.8
CEDAR RIVER							
City Cabin	21B03	2390	3/28	0	0.0	13.5	20.0
Mt. Gardner	21B21	3300	3/28	0	0.0	15.3	19.8
SNOQUALMIE RIVER							
Alpine Meadow	21B48	3500	3/28	66	29.5	56.4	55.2
Olallie Meadows	21B02	3625	4/2	55	20.6	50.0	51.9
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	3/30	106	42.8	56.8	54.9
Stevens Pass Sand Shed	21B45	3700	3/30	76	30.4	40.6	39.5
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	3/29	14	6.3	15.4	15.4
Beaver Pass	21A01	3680	3/29	80	28.6	36.2	35.0
Brown Top Ridge +	21A28a	6000	3/28	142	53.2	65.6	74.2
Cloudy Pass +	20A22a	6500		Marker down		-	49.8
Devils Park	20A04	5900	3/28	105	38.6	45.4	47.7
Freezeout Creek Trail	20A01	3500	3/29	27	8.7	14.6	13.7
Freezeout Meadows New	20A38	5000	3/29	87	37.7	30.7	41.0
Granite Creek	21A29A	3500	3/29	42	15.8	20.7	22.3
Harts Pass	20A05A	6500	3/28	119	42.2	45.1	48.5
Klesilkwa	3D03A-Can	3700	3/24	14	7.9	18.7	14.9*
Lightning Lake	3D02-Can	2500	3/29	31	10.2	15.0	14.3*
Lyman Lake	20A23A	5900	3/28	152	61.3	65.9	65.5
Meadow Cabins	20A08	1900	3/28	0	0.0	6.6	6.6
New Hozomeen Lake	21A30	2800	3/29	20	6.0	12.7	15.2
New Tashme	3D01A-Can	2500	3/30	0	0.0	11.9	10.6*
Rainy Pass	20A09	4780	3/29	101	35.4	42.0	43.7
Thunder Basin	20A07	4200	3/28	53	18.5	24.4	24.7

\# Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation.

SNOW DATA TO APRIL 1, 1983 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average #
BAKER RIVER							
Dock Butte	21A11A	3800	4/4	140	63.0	70.0	74.5
Easy Pass	21A07A	5200	4/4	184	83.0	-	88.7
Jasper Pass	21A06A	5400	4/4	222	100.0	-	92.6
Marten Lake	21A09A	3600	4/4	173	78.0	82.0	82.8
Mount Blum +	21A18a	5800	4/4	159	72.0	-	65.9
Rocky Creek	21A12A	2100	4/4	14	6.0	35.0	34.4
Schreibers Meadow	21A10A	3400	4/4	101	45.0	58.0	68.8
S. F. Thunder Creek	21A14A	2200	4/4	0	0.0	8.0	7.9
Watson Lakes	21A08A	4500	4/4	144	65.0	60.0	72.3
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	3/29	69	25.6	24.9	22.9
MORSE CREEK							
Cox Valley	23B14	4500	3/27	106	45.6	47.6	44.3
ELWHA RIVER							
Hurricane	23B03	4500	3/27	62	22.5	25.3	26.9

SNOTEL READINGS, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches) Last Year	Average +
PEND OREILLE RIVER							
Bunchgrass Meadow	17A01	5000	3/15		36.6	26.8	
			4/1		38.3	29.0	
		GT	3/31		27.1	(37.9)	
OKANOGAN RIVER & METHOW RIVER							
Harts Pass	20A05	6500	3/15		44.1	32.4	
			4/1		48.6	40.8	
Salmon Meadow	19A02	4500	3/15		27.9	14.8	
			4/1		32.2	18.9	
		GT	3/30	49	16.6	(33.1)	
CHELAN LAKE BASIN							
Lyman Lake	20A23	5900	3/15		58.0		
			4/1		65.3		
		GT	3/28	152	61.3	(61.3)	
Mirror Lake	20A39	5600	3/15		-	-	
			3/31		39.5	-	
		GT	3/28	99	36.9	(-)	
Park Creek Ridge	20A12	4600	3/15		-	51.1	
			4/1		48.3	51.6	
Rainy Pass	20A09	4780	3/15		42.2	-	
			4/1		45.2	-	
ENTIAT RIVER							
Pope Ridge	20B20	3450	3/15		17.6	21.5	
			4/1		16.9	19.4	
		GT	3/28	48	19.4	(15.6)	
WENATCHEE RIVER							
Blewett Pass	20B02	4270	3/15		19.2	19.3	
			4/1		21.0	20.8	
Lyman Lake	20A23	5900	3/15		58.0		
			4/1		65.3		
			3/28	152	61.3	(61.3)	
Stevens Pass	21B01	4070	3/15		23.0	36.9	
			4/1		23.9	37.0	
		GT	3/30	88	36.1	(23.6)	
Trough # 2	20B25	5310	3/15		20.0	17.4	
			4/1		24.1	19.2	
		GT	3/29	64	25.5	(23.9)	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth Measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average †
COLOCKUM CREEK							
Trough # 2	20B25	5310	3/15		20.0	17.4	
			4/1		24.1	19.2	
		GT	3/29	64	25.5	(23.9)	
STEMILT CREEK							
Upper Wheeler	20B07	4400	3/15		16.8	25.0	
			4/1		18.7	32.0	
		GT	3/28	53	16.8	(17.4)	
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	3/15		17.1	29.1	
			4/1		16.6	28.1	
		GT	3/28	36	16.0	(15.5)	
Bumping Ridge	21C38	4600	3/15		-	-	
		GT	3/16	76	31.8	(-)	
			4/1		-	-	
Corral Pass	21B13	6000	3/15		31.1	41.8	
			4/1		26.5	41.3	
		GT	3/31	105	36.5	(27.4)	
Fish Lake	21B04	3371	3/15		-	-	
			4/1		-	-	
		GT	3/28	62	28.0	(-)	
Green Lake	21C10	6000	3/15		31.1	25.8	
			4/1		34.2	26.6	
		GT	3/24		44.9		
Grouse Camp	20B11	5385	3/15		23.9	23.3	
			4/1		27.3	24.4	
		GT	3/29	84	30.4	(28.9)	
Morse Lake	21C17	5400	3/15		73.8	66.1	
			4/1		80.0	68.3	
		GT	3/31	185	67.8	(80.7)	
White Pass (E.S.)	21C28	4500	3/15		20.5	27.7	
			4/1		23.0	28.8	
		GT	3/29	72	27.0	(21.7)	
AHTANUM CREEK							
Green Lake	21C10	6000	3/15		31.1	25.8	
			4/1		34.2	26.6	
		GT	3/24		44.9		

GT = Ground Truth Measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
TOUCHET RIVER							
Touchet # 2	17C55	5530	3/15		32.3	51.0	
			4/1		37.9	54.0	
LEWIS RIVER							
June Lake	22C09	3200	3/15		25.5	-	
			4/1		26.0	27.2	
Lone Pine Shelter	21C26	3800	3/15		38.7	49.4	
			4/1		44.9	51.3	
Plains of Abraham	22C01	4400	3/15		-	-	
			4/1		-	-	
Sheep Canyon	22C10	4050	3/15		-	-	
			4/1		-	52.7	
Spencer Meadow	21C20	3400	3/15		26.7	-	
			4/1		30.2	-	
Surprise Lakes	21C13	4250	3/15		49.1	57.5	
			4/1		55.7	59.6	
COWLITZ RIVER							
Pigtail Peak	21C33	5900	3/15		41.1	58.6	
			4/1		45.8	61.4	
Sheep Canyon	22C10	4050	3/15		-	-	
			4/1		-	42.7	
Strawberry Landing	22C08	3280	3/15		35.5	65.4	
			4/1		39.9	70.3	
NISQUALLY RIVER							
Paradise Park	21C35	5500	3/15		-	-	
			4/1		-	-	
WHITE RIVER							
Corral Pass	21B13	6000	3/15		31.1	41.8	
			4/1		26.5	41.3	
		GT	3/31	105	36.5	(27.4)	
Morse Lake	21C17	5400	3/15		73.8	66.1	
			4/1		80.0	68.3	
		GT	3/31	185	67.8	(80.7)	
GREEN RIVER							
Cougar Mountain	21B42	3200	3/15		2.7	25.8	
			4/1		0.6	26.4	
		GT	3/30	7	2.7	(0.8)	
Stampede Pass	21B10	3860	3/15		31.8	-	
			4/1		36.2	-	
		GT	4/1	86	33.0	(36.2)	
SNOQUALMIE RIVER							
Olallie Meadows East	21B55	3960	3/15		43.9	-	
			4/1		49.7	-	
		GT	3/30	123	44.7	(47.0)	

GT = Ground Truth Measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
- Corps of Engineers

U. S. Department of Agriculture
- Forest Service

U. S. Department of Commerce
- NOAA, National Weather Service

U. S. Department of the Interior
- Bonneville Power Administration
- Bureau of Reclamation
- Geological Survey
- National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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Soil
Conservation
Service

Spokane,
Washington

Water Supply Outlook for Washington

as of MAY 1, 1983

in cooperation with

Department of Ecology
State of Washington

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TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: Fresh powder snow on Elephant Mountain, near the West Fork of Hyalite Creek, in Montana.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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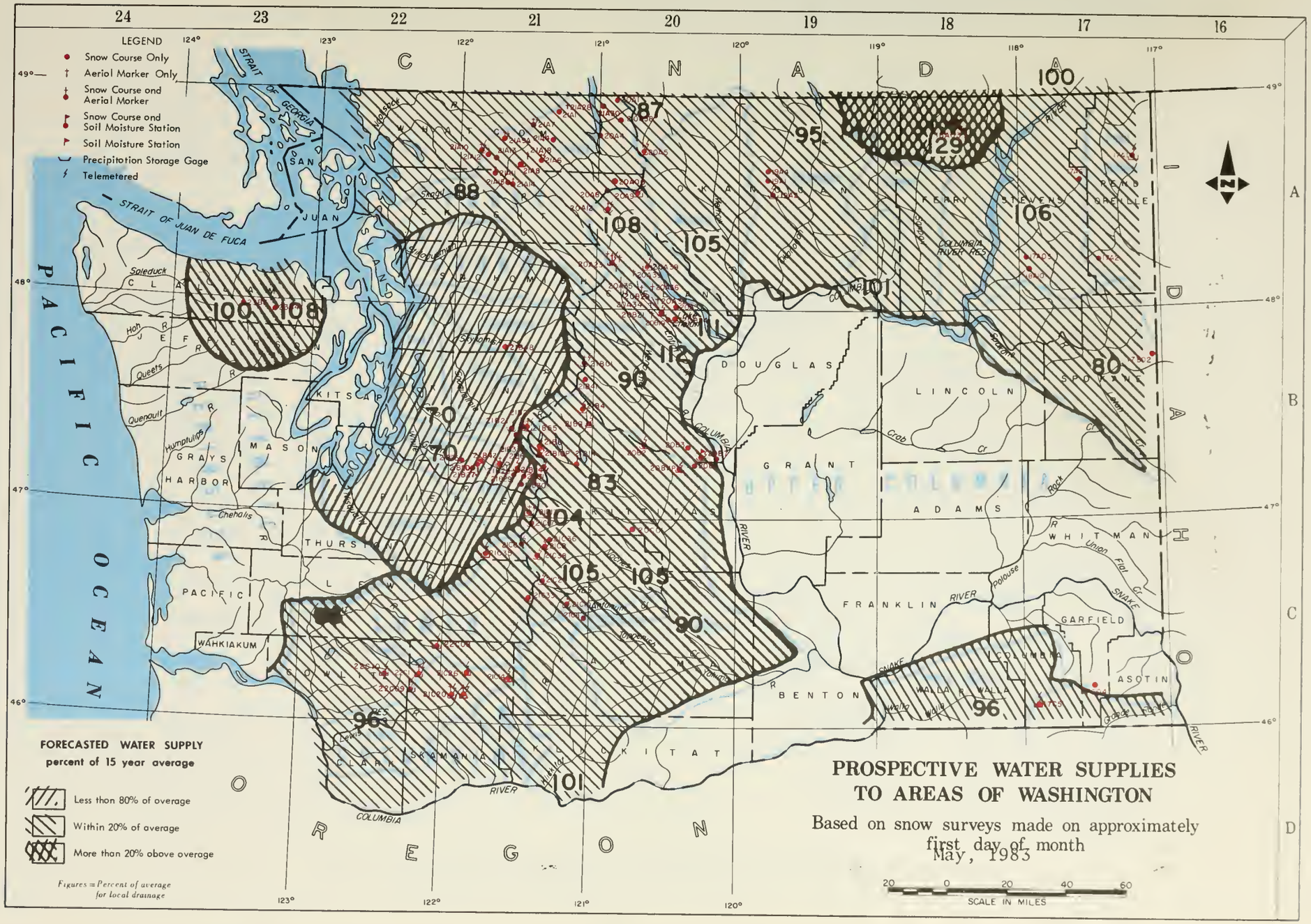
SPOKANE, WASHINGTON 99201

USDA-SCS-FORT WORTH TEXAS M7-OL-22028D



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Pend Oreille River					
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Kettle River					
Summit G. S.	18A7	20	39N	35E	4600
Spokane River					
Ragged Ridge	17B02	12	27N	45E	3333
Colville River					
Baird	17A6	19	36N	42E	3215
Stranger Mountain	17A5	26	31N	38E	4990
Taga	18A10	6	29N	38E	3370
Okanogan River					
Mutton Creek No. 1	19A1	30	37N	24E	5700
Muttan Creek No. 2	19A4	19	37N	24E	6000
Salman Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Loke Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Mirrar Lake	20A39	30	31N	18E	5600
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass Na. 2	20B2SP	35	22N	17E	4270
Stevens Poss	21B1SP	14	26N	13E	4070
Trough #2	20B25SP	10	20N	20E	5310
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Stemilt Creek					
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7SP	30	21N	20E	4400
Yakima River					
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9SP	35	23N	14E	3200
Bumping Lake	21C8P	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38SP	9	15N	12E	4600
Fish Lake	21B4SP	28	24N	14E	3371
Green Lake	21C10SP	3	12N	13E	6000
Grouse Camp	20B11SP	29	21N	19E	5385
Lake Cle Elum	21B14M	15	20N	14E	2200
Morse Lake	21C17SP	6	16N	11E	5400
Tunnel Avenue	21BBP	13	21N	11E	2450
White Pass (East Side)	21C28SP	2	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Touchet No. 2	17C5SP	6	7N	40E	5530
Lewis River					
June Lake	22C09SP	26	8N	5E	3200
Lane Pine Shelter	21C26SP	8	9N	7E	3800
Plains af Abraham	22C1SP	35	9N	5E	4400
Spencer Meadaw	21C20SP	16	8N	7E	3400
Surprise Lakes	21C13SP	14	7N	8E	4250
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Pigtail Peak	21C33SP	11	13N	11E	5900
Patata Hill	21C14SP	36	10N	10E	4500
Sheep Canyon	22C10SP	12	8N	4E	4050
Strawberry	22C08SP	9	10N	6E	3280

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3625
Olollie Meadows East	21B55SP	20	22N	11E	3700
Skagit River					
Beover Creek Trail	21A4	35	39N	12E	2200
Beover Poss	21A1	9	39N	12E	3680
Brawn Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	20A06	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	21A30	19	40N	14E	2800
Thunder Basin	20A07	10	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadaw	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500

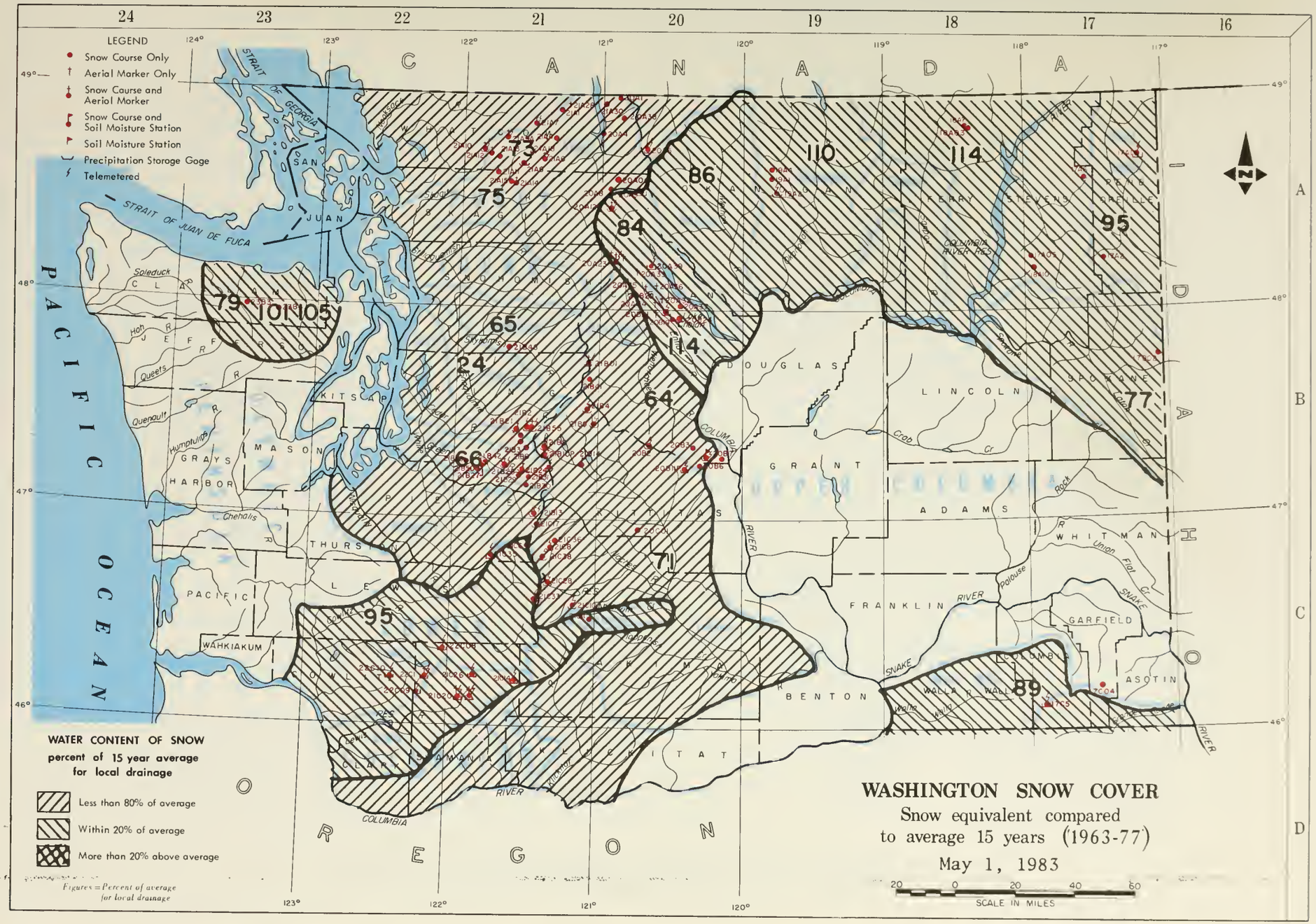
OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

USDA SCS-FORT WORTH, TEXAS 1983 M7-OL-22028C



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Togo	18A10	6	29N	38E	3370
Okonogan River					
Muttan Creek No. 1	19A1	30	37N	24E	5700
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Salmon Meadows	19A2SP	33	37N	24E	4500
Methow River					
Harts Pass	20A5SP	7	37N	18E	6500
Chelan Lake Basin					
Lyman Lake	20A23SP	18	31N	16E	5900
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Jasper Poss	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Maunt Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
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21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

May 1, 1983

The water supply outlook for Washington remains the same as last month. Near average to above average supplies are forecast for most of the state. Below average streamflow is forecast for the Cedar, White, and Green rivers on the west slope of the Cascades, with near average streamflow expected in the rest of Washington. The snowpack is fairly good for May 1 except for the west flank of the Cascades from Pierce County north to Canada. May precipitation was poor west of the Cascades and average to above average on the east side. Reservoir storage is good for May 1.

SNOW COVER

The mountain snowpack began its spring melt process during April. The Cascade snow cover now ranges from 24% on the Snoqualmie to 95% of average on the Cowlitz. North central Washington has a snowpack 110% on the Okanogan and 114% on the Kettle. In the northeastern part of the state the Pend Oreille snow cover is 95% of average, while the Spokane is 77%. The Blue Mountain snowpack in southeast Washington is near average. The snow cover in the Olympics is 80 to 100% of average.

PRECIPITATION

May precipitation in western Washington was 40 to 50% of normal. The above average trend that started this past winter in north central Washington continued in May with precipitation amounts of 150 to 180% of normal. Eastern Washington precipitation was near 80% and the east side of the Cascades was near normal for May.

RESERVOIR STORAGE

Reservoir storage is generally near average to above average in most Washington irrigation reservoirs. Franklin D. Roosevelt Lake has been lowered to near 60% of average May 1 contents in order to regulate the anticipated snowmelt runoff that will come during the next several months. The five principal irrigation reservoirs on the Yakima system are currently storing 917,000 acre-feet which is 122% of the average May 1 amount.

STREAMFLOW

Streamflow during May was mostly above average east of the Cascades except for those rivers in extreme eastern Washington. Volume flow on the Spokane, Pend Oreille, Palouse and Walla Walla ranged from 70 to 90% of normal during the month. West side streams produced flows average to above at the south end of the Cascades and below average from the central Cascades north. Streamflows this next summer are expected to be near average over most of the state except for the Cedar and Green rivers which should be near 70%.

STREAMFLOW FORECASTS - MAY, 1983

The following summarized runoff forecasts are based principally on mountain snowcover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify the streamflow. The forecasts are a cooperative effort of the Soil Conservation Service and the National Weather Service.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
			COLUMBIA BASIN				
COLUMBIA RIVER SYSTEM							
Columbia River	42600	100	May-Sept		45265	35923	42781
at Birchbank 1/	33300	99	May-July		35235	29192	33630
	23234	99	May June		23736	22730	23469
Columbia River	61900	101	May-Sept		63703	52308	61521
at Grand Coulee 1/	50500	100	May-July		51925	43612	50545
	37775	100	May-June		37635	35163	37775
Columbia River	68000	101	May-Sept		69986	56911	67032
bl. Rock Island Dam 1/	55800	100	May-July		57367	48166	55565
	41600	100	May-June		42026	39066	41600
Columbia River	92100	101	May-Sept		85504	78563	90972
at The Dalles, OR 1/	76100	100	May-July		70678	65325	75997
	58714	100	May-June		53611	53710	58714
PEND OREILLE RIVER SYSTEM							
Pend Oreille River	10600	78	May-Sept		11276	11197	13596
bl. Box Canyon	9570	78	May-July		9819	10042	12287
	7979	78	May-June		7851	8702	10230
KETTLE RIVER SYSTEM							
Kettle River	2087	129	May-Sept		1937	1422	1615
nr. Laurier	1950	128	May-July		1795	1334	1523
	1764	130	May-June		1467	1190	1357
Colville River	89	106	May-Sept		91	76	84
at Kettle Falls	77	106	May-July		77	66	73
	68	105	May-June		60	57	65

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	Seasonal Streamflow in Thousands of Acre-Feet 1982	1981	1980	15-yr. Average 63-77
SPOKANE RIVER SYSTEM **							
Spokane River	1640	80	May-Sept		1557	1675	2102
at Post Falls	1560	80	May-July		1464	1507	1966
	1466	80	May-June		1279	1365	1833
OKANOGAN RIVER SYSTEM							
Similkameen River	1250	87	May-Sept		1143	1340	1439
nr. Nighthawk	1160	87	May-July		1020	1251	1339
	969	87	May-June		1540	1108	1114
Okanogan River	1513	95	May-Sept			1418	1593
nr. Tonasket	1367	95	May-July		1324	1290	1439
	1120	95	May-June		1015	1107	1179
METHOW RIVER SYSTEM							
Methow River	981	105	May-Sept		717	915	938
nr. Pateros	883	102	May-July		655	854	863
	731	102	May-June		533	750	717
CHELAN RIVER SYSTEM							
Chelan River	1260	111	May-Sept		817	933	1139
at Chelan 3/	1110	113	May-July		699	833	982
	865	118	May-June		522	672	736
Stehekin River	890	108	May-Sept		594	643	823
at Stehekin	755	111	May-July		475	547	683
	570	115	May-June		335	425	497
Entiat	254	112	May-Sept		168	187	227
nr. Ardenvoir	232	114	May-July		150	171	204
	183	115	May-June		119	143	159
WENATCHEE RIVER SYSTEM							
Wenatchee River	1050	90	May-Sept				1172
at Plain	946	92	May-July				1032
	723	93	May-June				778
Wenatchee River	1750	110	May-Sept		1021	1201	1594
at Peshastin	1554	110	May-July		908	1087	1413
	1185	110	May-June		702	893	1077
Stemilt Basin	134*	97	May-Sept				138*
Icicle Creek	369	100	Apr-Sept				371
nr. Leavenworth	349	102	Apr-July				342
	290	104	Apr-June				279

* Thousands of Miners' Inches

** Forecasts made by Jerry Beard, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet: Forecast period	1982	1981	1980	15-yr. Average 63-77
YAKIMA RIVER SYSTEM							
Yakima River	98	80	May-Sept		68	78	122
nr. Martin 4/	89	81	May-July		56	66	110
	76	84	May-June		46	58	91
Yakima River	690	83	May-Sept		537	552	827
at Cle Elum 5/	620	84	May-July		480	476	735
	535	89	May-June		400	406	603
Yakima River	1664	90	May-Sept		922	1235	1815
nr. Parker 6/	1441	90	May-July		787	1134	1601
	1206	90	May-June		688	1011	1340
Kachess River	87	83	May-Sept		56	77	105
nr. Easton 7/	82	84	May-July		48	70	98
	72	88	May-June		42	57	82
Cle Elum River	370	87	May-Sept		252		423
nr. Roslyn 8/	340	90	May-July		221	252	379
	275	91	May-June		183	216	302
Bumping River	137	104	May-Sept		64	101	132
nr. Nile 9/	126	106	May-July		56	92	119
	101	109	May-June		48	83	93
American River	121	106	May-Sept			95	114
nr. Nile	110	107	May-July			88	103
	89	109	May-June			79	82
Tieton River	234	105	May-Sept		122	176	223
at Tieton Dam 10/	198	108	May-July		105	144	183
	153	110	May-June		82	118	139
Naches River	810	105	May-Sept		332	514	771
nr. Naches 11/	720	105	May-July		292	479	683
	610	110	May-June		251	422	555
Ahtanum Creek	43	111	May-Sept				39
nr. Tampico 12/	40	113	May-July				35
	44	118	May-June				29

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess, and cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1983	% 15-yr. Avg.	Forecast period	1982	1981	1980	15-yr. Average 63-77
			Seasonal Streamflow in Thousands of Acre-Feet				
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	7.4	96	May-Sept				7.7
nr. Walla Walla	7.0	94	May-July				7.5
	6.9	94	May-June				7.3
Lewis River	915	96	May-Sept		729		958
at Ariel 13/	765	97	May-July		604		788
	630	97	May-June		498		652
Cowlitz River	1550	90	May-Sept				1718
bl. Mayfield Dam	1301	90	May-July				1446
	1030	90	May-June				1145
Cowlitz River	2090	96	May-Sept		1628		2169
at Castle Rock 14/	1732	96	May-July		1363		1804
	1375	96	May-June		1113		1432
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	154	108	May-Sept				143
nr. Sequim	124	110	May-July				113
	87	110	May-June				79
ELWHA RIVER SYSTEM							
Elwha River	480	100	May-Sept				480
nr. Port Angeles	381	100	May-July				381
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	1773	88	May-Aug				2017
at Newhalem 15/	1909	88	May-Sept				2161
	1580	89	May-July				1776
	1148	89	May-June				1290
GREEN RIVER SYSTEM							
Green River	163	70	May-Sept				233
bl. Howard Hanson Dam 16/	141	70	May-July				201
	121	70	May-June				173
CEDAR RIVER SYSTEM							
Cedar River	52	70	May-Sept				74
nr. Cedar Falls	46	70	May-July				65
	38	71	May-June				54

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

0046G

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about May 1, 1983, as percent of the same date in 1982 and 2981 and average of record.

Tributary Basin	No. of Courses Average	1983 Snow Water expressed as percent of 1982	1981	1963-77 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	13	79	254	95
Kettle	8	91	168	114
Spokane	7	82	223	77
Okanogan	29	84	207	110
Methow	1	91	134	86
Chelan	4	80	130	84
Entiat	7	87	234	114
Wenatchee	5	53	301	64
Yakima	5	73	138	71
LOWER COLUMBIA BASIN				
Mill Creek	1	66	202	89
Cowlitz	1	86	-	95
PUGET SOUND				
Green	4	42	171	66
Snoqualmie	1	24	105	24
Skykomish	2	62	346	65
Skagit	11	77	232	75
Baker	7	69	212	73
OLYMPIC PENINSULA				
Morse Creek	1	82	303	101
Elwha	1	77	342	79
Dungeness	1	88	686	105

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured May 1 1983	1982	1981	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	182.3	247.5	248.0	238.4
Columbia	Franklin D. Roosevelt Lake	5232.0	523.4	412.9	3198.4	867.8
Columbia	Banks Lake	714.9	650.7	618.7	672.7	442.8
Okanogan	Conconully Reservoir	13.0	13.1	11.6	9.1	7.7
Okanogan	Conconully Lake	10.5	10.4	10.2	10.0	8.0
Chelan	Lake Chelan	676.1	281.0	201.8	224.9	219.0
		YAKIMA				
Yakima	Keechelus Lake	157.8	139.6	152.8	159.6	113.8
Kachess	Kachess Lake	239.0	227.1	221.2	240.3	194.2
Cle Elum	Lake Cle Elum	436.9	393.2	184.4	365.1	295.9
Bumping	Bumping lake	33.7	8.8	7.5	34.3	11.6
Tieton	Rimrock Lake	198.0	148.3	178.0	198.3	136.6
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	656.8	632.1	1086.3	711.5
Skagit	Diablo Reservoir	90.6	85.5	87.2	87.9	86.4
Skagit	Gorge Reservoir	9.8	8.4	8.0	7.9	8.1

1/ Based on Active Storage

* 15-yr. Average 1963-77

0045G

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1982 2/ Observed	Departure	WINTER Nov. 1982 - Mar. 1983 Observed	Departure	SPRING April 1983 Observed	Departure
Columbia in Canada	5.40	+0.38	13.08	-2.43	1.74	+0.03
Pend Oreille - Spokane	4.85	0.81	18.97	+1.42	1.50	-0.32
Northeastern Washington	2.73	+0.25	14.10	+4.70	2.22	+0.96
Southeastern Washington	4.19	+1.68	12.11	+1.68	1.24	-0.29
Central Washington	6.27	+1.52	8.27	+2.99	0.61	-0.04
North Central Washington	2.35	+0.76	9.02	+2.48	1.27	+0.42
Northwest Slope Cascades	12.32	-0.89	52.37	-3.02	2.64	-4.00
Southwest Slope Cascades	10.16	+1.48	44.41	+2.77	2.34	-2.25

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse Drainages.
Central Washington	- Yakima, Wenatchee and Chelan Drainages
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

1/ Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

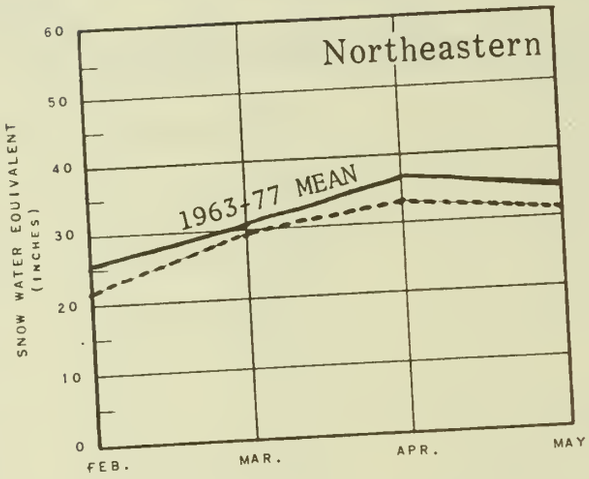
1/ Departure from 15-year (1958-72)drainage division average.

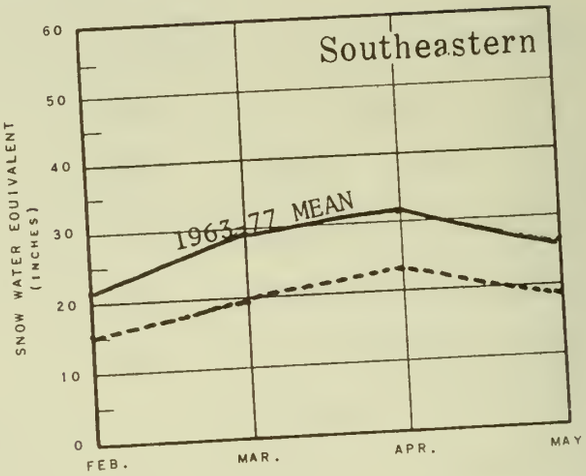
0044G

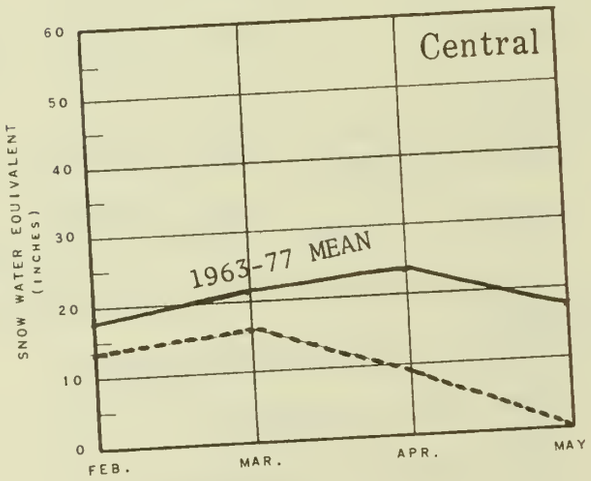
WASHINGTON SNOW COVER

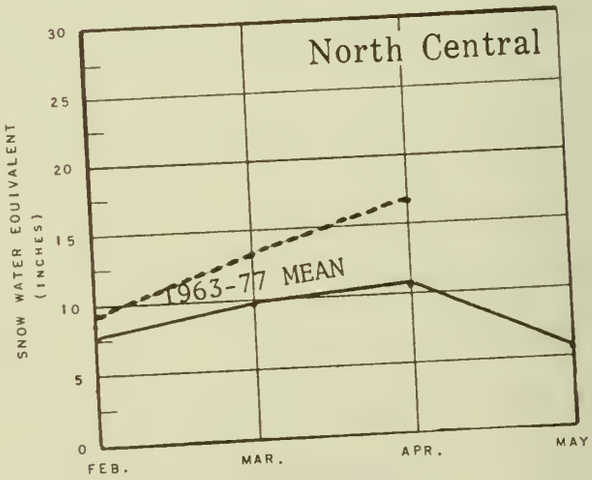
1983

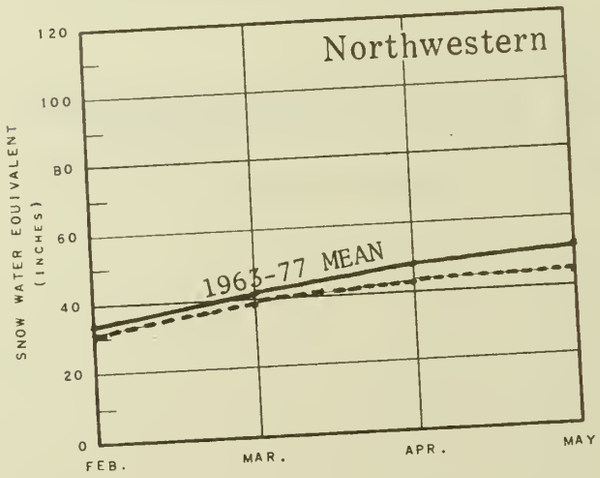
DRAINAGE AREAS

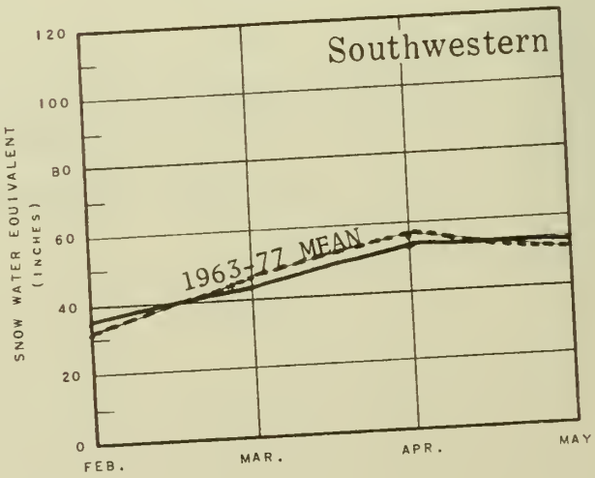












Average ———
1983 - - - -

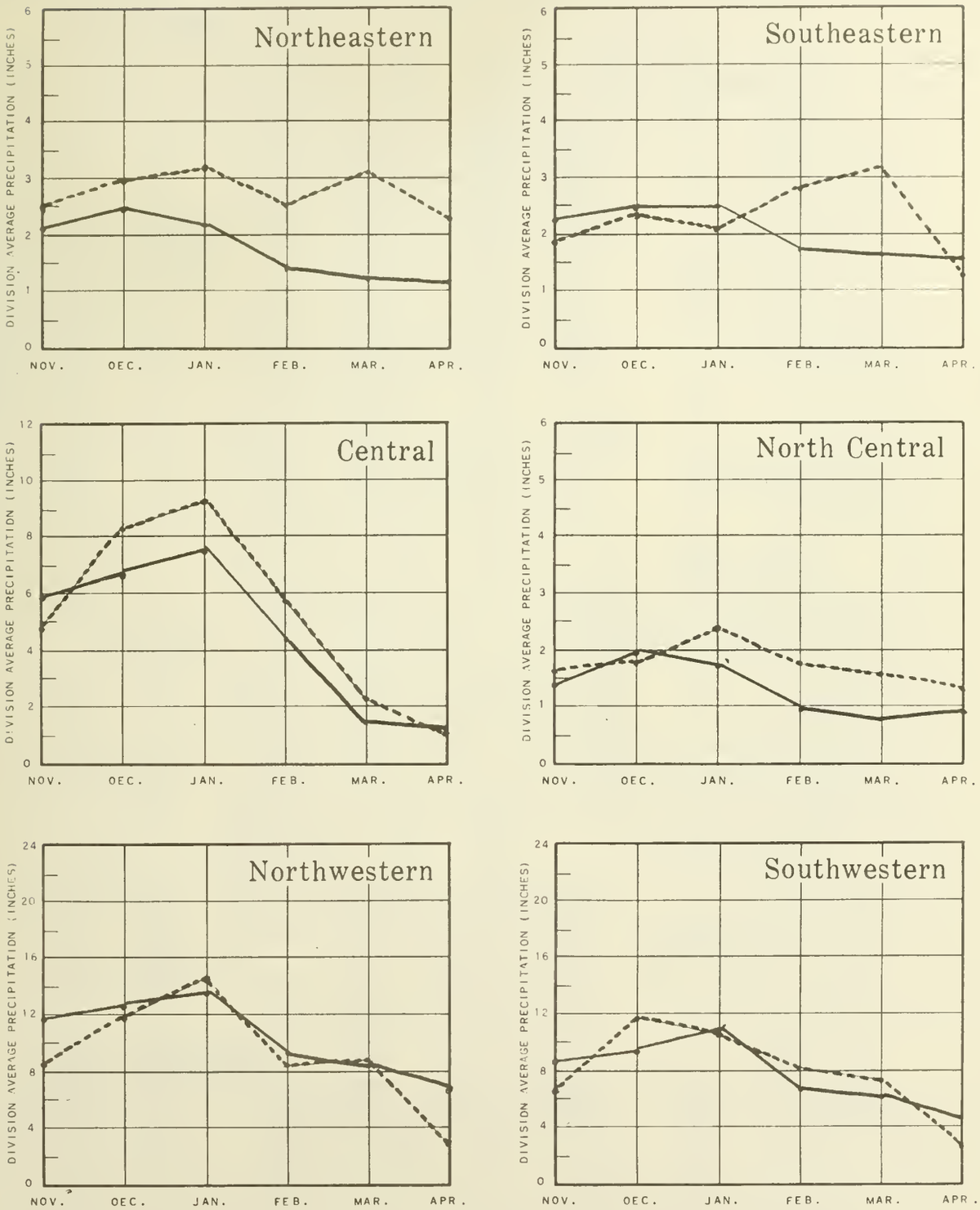
Selected Snow Survey Courses by Soil Conservation Service

M7-L-22028G

WASHINGTON VALLEY PRECIPITATION

1983

DRAINAGE AREAS



Average ———
1983 - - - - -

Preliminary Analysis by National Weather Service

M7-L-22D28H

SNOW DATA TO MAY 1, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	4/28	97	43.7	51.5	49.5
Baree Midway	15B16	4600	4/28	76	28.9	38.6	35.1
Baree Trail	15B15	3800	4/28	0	0.0	3.7	1.8
Benton Meadow	16A02	2344	4/29	0	0.0	0.0	0.0
Benton Spring	16A03	4900	4/29	39	19.5	17.7	16.7
Boyer Mountain	17A02	5250	4/27	105	31.8	25.7	25.2
Brush Creek Timber	14A13	5000	4/28	21	6.6	9.4	8.1
Heart Lake Trail	14C10	4800	4/30	20	9.0	25.2	19.1
Hoodoo Basin	15C10	6000	4/30	96	45.7	68.5	55.6
Hoodoo Creek	15C01	5900	4/30	90	41.4	61.8	52.0
Lookout	15B02	5250	4/14	84	34.8	41.4	38.6
			4/28	69	30.6	37.6	35.4
Nelson	2D04-Can	3050	4/29	13	5.6	13.7	7.0*
Schweitzer Bowl	16A06	4500	4/28	79	36.3	40.1	26.8
Schweitzer Ridge	16A05	6100	4/28	126	58.7	61.3	47.5
Smith Creek	16A01	4800	4/28	106	51.0	58.0	47.4
KETTLE RIVER							
Barnes Creek	2B06-Can	5300	4/29	47	19.2	23.4	20.6*
Big White Mtn.	2E03-Can	5500	4/30	61	25.7	21.7	20.9*
Bluejoint Mtn.	2E06-Can	7500	4/29	94	42.4	37.7	29.5*
Carmi	2E02-Can	4100	4/30	0	0.0	2.6	1.9*
Farron # 1	2B02-Can	4000	4/29	30	12.6	13.2	8.5*
Farron # 2	2B02A-Can	4000	4/29	32	14.2	13.7	9.6*
Graystoke Lake	2F04-Can	5950	4/27	45	16.1	18.9	19.3*
Monashee Pass	2E01-Can	4500	4/29	28	12.1	16.5	12.9*
Trapping Creek Upper	2E04-Can	4450	5/1	13	4.7	7.7	5.9*
SPOKANE RIVER							
Above Burke	15B08	6100	4/28	29	13.4	20.6	19.7
Copper Ridge	16B02	4800	4/25	43	20.5	16.7	25.7
Forty-nine Meadows	15B03	5000	4/28	54	20.6	28.0	26.9
Fourth of July Summit	16B03	3100	4/28	0	0.0	1.6	-
Granite Peak	15B13A	6000	4/28	99	37.0	50.0	47.6
Lookout	15B02	5250	4/14	84	34.8	41.4	38.6
			4/28	69	30.6	37.6	35.4
Lost Lake	15B14A	6000	4/28	123	49.4	63.6	62.5
Lower Sands Creek	16B01	3400	4/28	31	13.1	15.9	18.3
Sherwin	16C01	3200	4/29	0	0.0	10.0	7.2

\# Average based on 1963-77 average
* Average for years of record

SNOW DATA TO MAY 1, 1983 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #
OKANOGAN RIVER							
Aberdeen Lake	1F01A-Can	4300	4/29	10	3.5	5.7	1.8*
Blackwall Mountain	2G03-Can	6250	5/3	70	31.5	37.5	37.3*
Bouleau Lake	2F21-Can	4580	4/30	43	17.3	18.0	13.4*
Brenda Mine	2F18-Can	4800	4/28	67	12.0	13.7	10.0*
Brookmere	2C01-Can	3200	4/30	9	2.7	7.2	5.5*
Enderby	2F04-Can	6250	5/2	107	50.4	54.1	42.9*
Esperon Creek Lower	2F15-Can	4400	5/1	28	11.3	12.7	9.3*
Esperon Creek Middle	2F14-Can	4700	5/1	33	14.9	14.1	12.3*
Esperon Creek Upper	2F13-Can	5400	5/1	44	21.0	19.8	18.1*
Freezeout Mdw. New	20A38	5000	4/28	82	37.1	31.8	40.3
Grayback Res.	2F08-Can	5225	4/27	33	10.9	10.4	7.9*
Graystoke Lake	2F04-Can	5950	4/27	45	16.1	18.9	19.3*
Hamilton Hill	2G06-Can	4900	4/27	22	8.3	15.1	13.0*
Harts Pass	20A05A	6500	4/27	110	44.2	48.7	51.5
Isintok Lake	2F11-Can	5510	4/30	15	4.3	8.5	6.9*
Lightning Lake	3D02-Can	4000	4/29	26	9.8	13.5	10.7*
Lost Horse Mtn.	2G04-Can	6300	5/2	30	9.7	11.7	10.4*
McCulloch	2F03-Can	4200	4/30	2	0.6	4.4	2.7*
Missezula Mountain	2G05-Can	5100	4/28	17	5.1	9.0	6.1*
Mission Creek	2F05-Can	6000	4/27	63	24.3	24.8	21.7*
Monashee Pass	2E01-Can	4500	4/29	28	12.1	16.5	12.9*
Mount Kobau	2F12-Can	5950	4/30	52	20.1	16.5	12.9*
Mutton Creek # 1	19A01	5700		Not Measured		18.8	11.3
Mutton Creek # 1 SP	19A11	6000		Not Measured		15.4	13.9
Nickel Plate Mtn.	2G02-Can	6200	4/28	26	8.3	9.3	8.0*
Oyama Lake	2F19-Can	4400	4/28	11	3.9	5.0	3.0*
Postill Lake	2F07-Can	4500	4/29	20	7.0	8.0	6.6*
Rusty Creek	19A03	4000		Not Measured		2.5	0.8
Salmon Meadows	19A02	4500		Not Measured		10.4	6.2
Silver Star Mtn.	2F10-Can	6050	4/30	80	36.8	37.2	28.4*
Summerland Res.	2F03-Can	4200	4/29	16	6.3	8.2	6.7*
Sunday Summit	2G01A-Can	4300	4/29	0	0.0	1.2	1.0*
Trout Creek	2F01-Can	4700	4/28	8	2.7	6.7	5.1*
Vaseux Creek	2F20-Can	4600	4/28	20	7.6	5.0	2.6*
White Rocks Mtn.	2F09-Can	6000	4/29	64	29.0	26.6	24.0*
METHOW RIVER							
Harts Pass	20A05A	6500	4/27	110	44.2	48.7	51.5
CHWLAN LAKE BASIN							
Little Meadows +	20A24a	5275	4/28	100	42.0	-	65.7
Lyman Lake +	20A23A	5900	4/28	156	62.0	-	82.0
Park Creek Ridge	20A12A	4600	4/28	85	36.0	52.5	31.7
Rainy Pass	20A09	4780	4/28	90	39.0	42.8	47.5

Average based on 1963-77 average
* Average for years of record
+ Snow water equivalent estimated from aerial stadia observation.

SNOW DATA TO MAY 1, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches) Last Year	Water Content (Inches) Average #
ENTIAT RIVER							
Entiat Meadows +	20A33a	4540	4/30	102	46.9	50.4	35.7
Entiat River Trail +	20A34a	3325	4/30	0	0.0	15.2	3.0
Fox Camp +	20A36a	6510	4/30	158	72.7	69.8	64.1
Pope Ridge	20B20	3540	4/28	25	10.3	17.8	9.8
Pugh Ridge +	20A32a	6725	4/30	104	47.8	42.9	30.8
Shady Pass	20A37	6200	4/28	74	33.8	37.3	31.6
Snow Brushy +	20A35a	3910	4/30	79	32.4	41.6	29.4
Tommy Creek +	20B21a	4900	4/30	37	17.0	23.0	21.7
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	4/28	36	16.5	31.8	23.9
Berne-Mill Creek New	21B41	3240	4/28	19	9.1	26.0	19.8
Blewett Pass No. 2	20B02	4270		SNOTEL		15.1	10.8
Chiwaukum G.S.	20B16	1810		Not Measured		4.1	1.5
Fish Lake	21B04	3371		SNOTEL		32.4	28.0
Lake Wenatchee	20B05	1970		Not Measured		7.7	2.7
Lyman Lake	20A23A	5900	4/28	156	62.0	-	82.0
Merritt	20B18	2140		Not Measured		10.5	5.5
Stevens Pass	21B01	4070	4/28	84	40.5	58.6	57.5
Stevens Pass Sand Shed	21B45	3700	4/28	47	22.0	40.0	37.3
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	4/13	23	9.9	-	-
			5/1	Not Measured		0.9	2.2
Scout-A-Vista	20B04	3400	4/13	10	3.7	-	-
			5/1	Not Measures		0.0	0.3
STEMILT CREEK							
Stemilt Slide	20B06	5000	4/13	48	19.7	-	-
			5/1	Not Measured		8.4	7.8
Upper Wheeler	20B07	4400		SNOTEL		0.0	1.3
COLOCKUM CREEK							
Trough # 2	20B25	5310		SNOTEL		16.5	New
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	4/25	0	0.0	0.0	-
Big Boulder Creek	21B09	3200		SNOTEL		10.9	10.9
Blewett Pass # 2	20B02	4270		SNOTEL		15.1	10.8
Bumping Lake	21C08	3450	4/13	37	14.8	12.4	13.8
			4/28	19	8.1	8.0	10.2
Bumping Lake New	21C36	3400	4/14	47	19.9	18.8	19.6
			4/28	32	13.9	13.6	15.2

\# Average based on 1963-77 average

\+ Snow water equivalent estimated from aerial stadia observation.

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
YAKIMA RIVER (Cont.)							
Cayuse Pass	21C06	5300		Not Measured		94.0	98.1
Corral Pass	21B13	6000		SNOTEL		53.1	42.6
Fish Lake	21B04	3371		SNOTEL		32.4	28.0
Lake Cle Elum	21B14M	2200	4/15	Not Measured		1.7	2.7
Morse Lake	21C17	5400		SNOTEL		72.8	61.9
Olallie Meadows	21B02	3625	4/29	27	12.8	53.7	53.4
Stampede Pass	21B10	3860	4/14	77	33.4	55.4	42.9
			5/1	51	28.6	52.8	43.4
Tunnel Avenue	21B08	2450	4/18	12	4.6	23.2	23.9
			5/1	Not Measured		20.3	17.5
White Pass (E. Side)	21C28	4500	4/13	71	28.2	29.7	26.9
			4/27	61	26.3	30.7	27.6
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	4/25	0	0.0	0.0	-
LOWER COLUMBIA DRAINAGE							
MILL CREEK							
High Ridge	18D19	4150	5/2	63	24.0	36.4	27.0
COWLITZ RIVER							
Cayuse Pass	21C06	5300		Not Measured		94.0	98.1
White Pass (E. Side)	21C28	4500	4/13	71	28.2	29.7	26.9
			4/27	61	26.3	30.7	27.6
PUGET SOUND DRAINAGE							
WHITE PASS							
Cayuse Pass	21C06	5300		Not Measured		94.0	98.1
Corral Pass	21B13	6000		SNOTEL		53.1	42.6
Morse Lake	21C17	5400		SNOTEL		72.8	61.9
GREEN RIVER							
Airstrip	21B24	1800	4/29	0	0.0	0.0	2.1
Charley Creek	21B25	1200	4/29	0	0.0	0.0	-
Cougar Mtn.	21B42	3200		SNOTEL		22.3	20.7
Grass Mtn. # 2	21B27	2900	4/29	0	0.0	10.5	-
Grass Mtn. # 3	21B28	2100	4/29	0	0.0	0.0	-
Lester Creek	21B29	3100	4/29	12	5.0	23.2	-
Lynn Lake	21B50	4000	4/29	0	0.0	24.5	-
Sawmill Ridge	21B31	4700	4/29	52	22.0	39.8	-
Stampede Pass	21B10	3860	4/14	77	33.4	55.4	42.9
			5/1	51	28.6	52.8	43.4
Twin Camp	21B30	4100	4/29	26	10.8	29.3	-

Average based on 1963-77 average

SNOW DATA TO MAY 1, 1983 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
SNOQUALMIE RIVER							
Olallie Meadows	21B02	3625	4/29	27	12.8	53.7	53.4
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	4/28	84	40.5	58.6	57.5
Stevens Pass Sand Shed	21B45	3700	4/28	47	22.0	40.0	37.3
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	4/27	0	0.0	8.9	7.3
Beaver Pass	21A01	3680	4/27	64	28.3	35.9	34.5
Brown Top Ridge +	21A28a	6000	4/27	136	50.4	66.8	74.7
Devils Park	20A04	5900	4/27	98	40.4	47.2	50.4
Freezeout Creek Trail	20A01	3500	4/28	12	4.9	13.1	10.2
Freezeout Meadows New	20A38	5000	4/28	82	37.1	31.8	40.3
Granite Creek	21A29A	3500	4/28	18	7.3	16.6	18.2
Harts Pass	20A05A	6500	4/27	110	44.2	48.7	51.5
Klesilkwa	3D03A-Can	3700	4/22	0	0.0	15.0	7.3*
Lightning Lake	3D02-Can	4000	4/29	26	9.8	13.5	10.9*
Lyman Lake	20A23A	5900	4/28	156	62.0	-	82.0
Meadow Cabins	20A08	1900	4/27	0	0.0	2.1	1.9
New Hozomeen Lake	21A30	2800	4/28	0	0.0	8.3	10.5
New Tashme	3D01A-Can	2500	4/30	0	0.0	7.9	3.3*
Rainy Pass	20A09	4780	4/28	90	39.0	42.8	45.7
Thunder Basin	20A07	4200	4/28	53	19.6	26.8	26.2
BAKER RIVER							
Dock Butte	21A11A	3800	4/29	110	48.0	79.0	79.3
Easy Pass	21A07A	5200	4/29	153	73.0	104.0	97.6
Jasper Pass	21A06A	5400	4/29	176	85.0	111.0	99.8
Marten Lake	21A09A	3600	4/29	142	68.0	92.0	87.0
Mount Blum +	21A18a	5800	4/29	144	69.0	86.0	76.1
Rocky Creek	21A12A	2100	4/29	0	0.0	33.0	28.4
Schreibers Meadow	21A10A	3400	4/29	70	34.0	68.0	70.5
S. F. Thunder Creek	21A14A	2200	4/29	0	0.0	0.5	2.0
Watson Lakes	21A08A	4500	4/29	118	57.0	77.0	77.7
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	4/27	59	25.4	28.9	24.2
MORSE CREEK							
Cox Valley	23B14	4500	5/1	96	45.8	55.6	45.3
ELWHA RIVER							
Hurricane	23B03	4500	4/30	52	22.2	28.7	28.2

Average based on 1963-77 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation.

SNOTEL READINGS, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (inches)	Water Content (inches)	Last Year	Average †
PEND OREILLE RIVER							
Bunchgrass Meadow	17A01	5000	4/15		39.5		
			5/1		40.9		
OKANOGAN & METHOW RIVERS							
Harts Pass	20A05	6500	4/15		51.1		
			5/1		50.5		
Salmon Meadow	19A02	4500	4/15		33.3		
			5/1		17.1		
CHELAN LAKE BASIN							
Lyman Lake	20A23	5900	4/15		68.7		
			5/1		64.0		
Mirror Lake	20A39	5600	4/15		-		
			5/1		-		
Park Creek Ridge	20A12	4600	4/15		49.5		
			5/2		41.5		
Rainy Pass	20A09	4780	4/15		47.0		
			5/1		42.6		
ENTIAT RIVER							
Pope Ridge	20B20	3450	4/15		14.5		
			5/1		1.9		
		GT	4/28	25	10.6	(3.8)	
WENATCHEE RIVER							
Blewett Pass	20B02	4270	4/15		21.0		
			5/1		11.9		
		GT	4/28	24	12.5	(14.5)	
Lyman Lake	20A23	5900	4/15		68.7		
			5/1		64.0		
Stevens Pass	21B01	4070	4/15		24.5		
			5/1		16.3		
		GT	4/28	63	29.1	(18.2)	
Trough	20B25	5310	4/15		24.9		
		GT	4/13	63	25.3	(24.8)	
			5/1		18.9		
COLOCKUM CREEK							
Trough	20B25	5310	4/15		24.9		
		GT	4/13	63	25.3	(24.8)	
			5/1		18.9		

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth measurement is SNOTEL reading on same date.

SNOTEL READINGS, 1983 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
STEMILT CREEK							
Upper Wheeler	20B07	4400	4/15		19.6		
		GT	4/13	45	17.5	(19.8)	
			5/1		13.6		
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	4/15		15.6		
			5/1		4.8		
		GT	4/29	23	11.3	(6.8)	
Bumping Ridge	21C38	4600	4/15		-		
			5/1		-		
Corral Pass	21B13	6000	4/15		24.4		
			5/1		19.2		
Fish Lake	21B04	3371	4/15		-		
			5/1		-		
		GT	4/26	58	29.6	(-)	
Green Lake	21C10	6000	4/15		35.2		
			5/1		34.8		
Grouse Camp	20B11	5385	4/15		29.4		
			5/1		30.9		
		GT	4/27	60	29.8	(25.6)	
Morse Lake	21C17	5400	4/15		81.7		
			5/1		80.5		
White Pass (E.S.)	21C28	4500	4/15		23.9		
			5/1		20.7		
AHTANUM CREEK							
Green Lake	21C10	6000	4/15		35.2		
			5/1		34.8		
TOUCHET RIVER							
Touchet # 2	17C55	5530	4/15		39.2		
		GT	4/18	69	28.1	(37.0)	
			5/1		31.9		
LEWIS RIVER							
June Lake	22C09	3200	4/15		-		
			5/1		-		
Lone Pine Shelter	21C26	3800	4/15		46.8		
			5/1		42.5		
Plains of Abraham	22C01	4400	4/15		-		
			5/1		-		

GT = Ground Truth measurement at SNOTEL site
NOTE: () following GT measurement is SNOTEL reading on same date.

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
LEWIS RIVER (Cont.)							
Sheep Canyon	22C10	4050	4/15		-		
			5/1		-		
Spencer Meadow	21C20	3400	4/15		32.0		
			5/1		22.6		
Surprise Lakes	21C13	4250	4/15		58.7		
			5/1		51.8		
COWLITZ RIVER							
Pigtail Peak	21C33	5900	4/15		48.0		
			5/1		46.1		
Potato Hill	21C14	4500	4/15		-		
			5/1		-		
Sheep Canyon	22C10	4050	4/15		-		
			5/1		-		
Strawberry Landing	22C08	3280	4/15		40.2		
			5/1		37.9		
NISQUALLY RIVER							
Paradise Park	21C35	5500	4/15		-		
			5/1		-		
		GT	4/23	144	72.0	(-)	
WHITE RIVER							
Corral Pass	21B13	6000	4/15		24.4		
			5/1		19.2		
Morse Lake	21C17	5400	4/15		81.7		
			5/1		80.5		
GREEN RIVER							
Cougar Mountain	21B42	3200	4/15		0.2		
			5/1		0.0		
Stampede Pass	21B10	3860	4/15		39.4		
			5/1		33.5		
		GT	5/1	65	35.0	(33.5)	
SNOQUALMIE RIVER							
Olallie Meadows East	21B55	3960	4/15		51.6		
			5/1		46.2		

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
- Corps of Engineers

U. S. Department of Agriculture
- Forest Service

U. S. Department of Commerce
- NOAA, National Weather Service

U. S. Department of the Interior
- Bonneville Power Administration
- Bureau of Reclamation
- Geological Survey
- National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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United States
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Agriculture

Soil
Conservation
Service

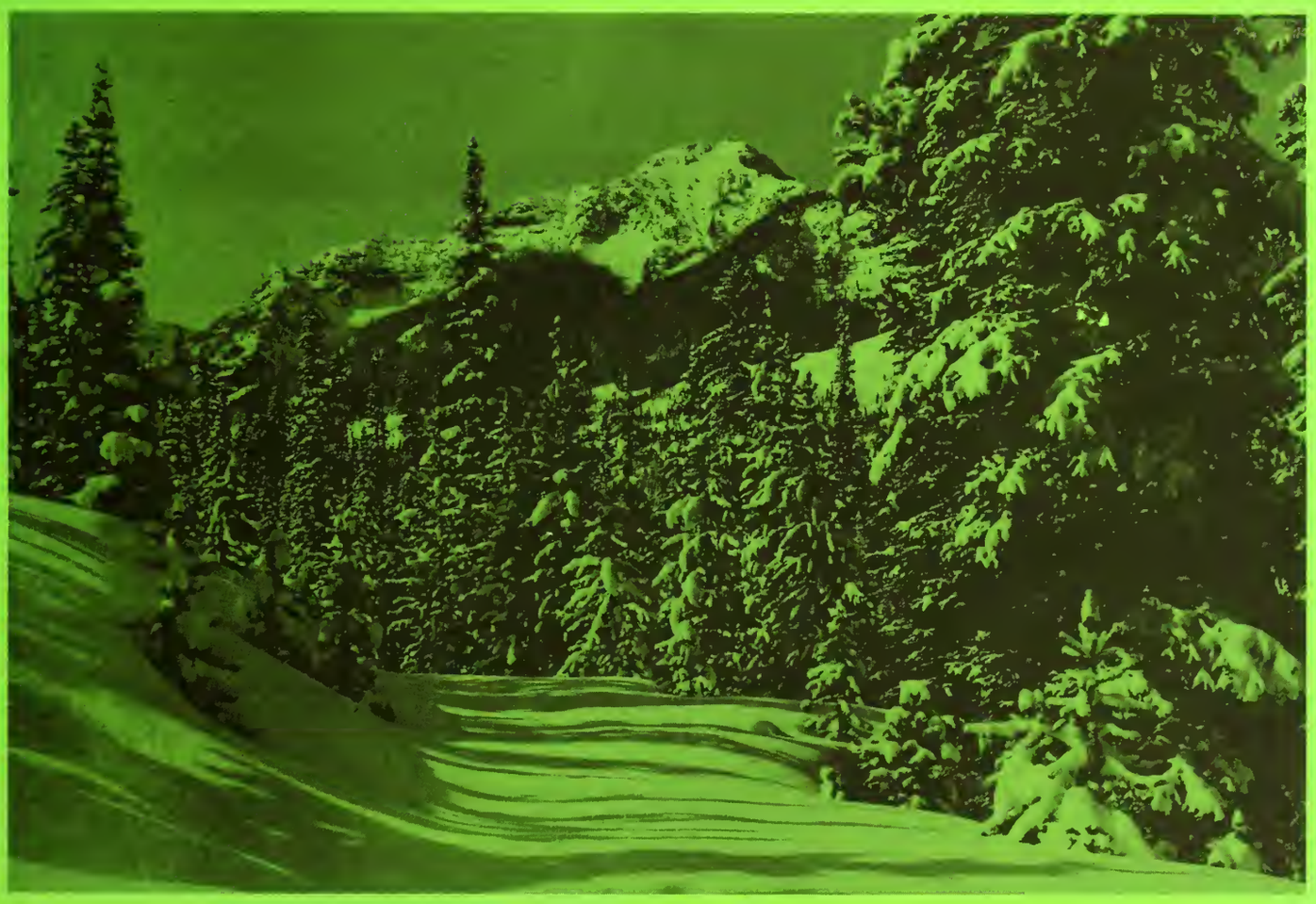
Spokane,
Washington

Water Supply Outlook for Washington

as of JUNE 1, 1983

in cooperation with

Department of Ecology
State of Washington



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TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: Fresh powder snow on Elephant Mountain, near the West Fork of Hyalite Creek, in Montana.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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WATER SUPPLY OUTLOOK

State of Washington

June 1, 1983

The water supply outlook for Washington remains the same as last month. Average to above average water supplies are forecast for most of the state. The Cedar, White, and Green rivers will have below average streamflow. May precipitation was below average for the month. Above average temperatures during the last two weeks of May eliminated the snowpack on all but the very high elevation snow sites. Reservoir storage is average or above for all of the reporting reservoirs.

NOTE: THIS IS THE LAST WATER SUPPLY REPORT FOR 1983. IF YOU WISH TO RECEIVE THESE REPORTS NEXT YEAR, PLEASE RETURN THE BACK COVER OF THIS REPORT WITH YOUR ADDRESS LABEL ATTACHED. PLEASE INDICATE ANY CHANGE IN YOUR ADDRESS.

SNOW COVER

Only a few snow courses have snow remaining as of June 1. Twelve of the 40 SNOTEL sites are still reporting snow water. Most of the manual sites still reporting snow are Canadian courses where the snow water equivalent is 95% of normal. The west coast area of Snohomish to the Green and the Wenatchee basin, both having only one snow course measured with snow to be compared to normal, indicate only 28% of normal snow water equivalent.

PRECIPITATION

Early May rainfall and cool weather gave way to above normal temperatures and dry weather for the last two weeks of May. The April-May precipitation was below average for most of the state with only the North Central and North Eastern drainage divisions being above average for this period. The West Slope of the Cascades had about 60% of average precipitation during the April-May period with May having 84% for the Northwest Slope and 70% for the Southwest slope.

RESERVOIR STORAGE

Reservoir storage is average or above for the state. The Yakima irrigation reservoirs are at 116% of normal and the Okanogan at 120%. Columbia River reservoirs are near normal as are the reservoirs on the Skagit River.

STREAMFLOW

Streamflow varied greatly over the state, being much above average for the north central part to much below average for the west slope of the Cascades. Minor flooding along the Okanogan and Methow rivers during late May highlighted the period. Above average streamflow percentages around the state for the month of May include the Okanogan and Kettle rivers at 141%; Chelan at 131%; Similkameen, 124%; and the Yakima at Kiona at 116%. Streams which were below average include the Green River at 50%; Skykomish at 73%; and the Skagit at 87%. The Spokane River continues low at 67%. Most other streams were within 10% of average for May.

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured May 31 1983	1982	1981	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	235.2	238.0	213.7	225.0
Columbia	Franklin D. Roosevelt Lake	5232.0	2350.1	2340.5	4845.6	2565.6
Columbia	Banks Lake	714.9	648.0	632.0	672.7	406.2
Okanogan	Conconully Reservoir	13.0	13.5	13.1	13.2	9.1
Okanogan	Conconully Lake	10.5	10.4	10.4	10.4	9.4
Chelan	Lake Chelan	676.1	566.0	391.7	653.5	450.6
		YAKIMA				
Yakima	Keechelus Lake	157.8	156.8	149.2	147.4	139.6
Kachess	Kachess Lake	239.0	238.6	229.6	237.2	217.1
Cle Elum	Lake Cle Elum	436.9	435.8	326.5	436.4	367.9
Bumping	Bumping lake	33.7	33.6	29.8	33.1	25.4
Tieton	Rimrock Lake	198.0	195.0	189.8	193.2	160.2
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	1001.7	855.6	1362.1	1033.9
Skagit	Diablo Reservoir	90.6	85.9	87.4	86.7	86.1
Skagit	Gorge Reservoir	9.8	7.4	7.9	7.9	8.3

1/ Based on Active Storage

* 15-yr. Average 1963-77

0045G

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL Sept-Oct 1982 2/ Observed	Departure	WINTER Nov. 1982 - Mar. 1983 Observed	Departure	SPRING Apr-May 1983 Observed	Departure
Columbia in Canada	5.40	+0.38	13.08	-2.43	2.64	-0.83
Pend Oreille - Spokane	4.85	0.81	18.97	+1.42	3.09	-0.76
Northeastern Washington	2.73	+0.25	14.10	+4.70	3.27	+0.27
Southeastern Washington	4.19	+1.68	12.11	+1.68	2.42	-0.51
Central Washington	6.27	+1.52	8.27	+2.99	1.08	-0.27
North Central Washington	2.35	+0.76	9.02	+2.48	2.04	+0.27
Northwest Slope Cascades	12.32	-0.89	52.37	-3.02	5.80	-4.60
Southwest Slope Cascades	10.16	+1.48	44.41	+2.77	4.25	-3.05

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

Southwest Slope Cascades - Lower Columbia Drainages.

1/ Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ Departure from 15-year (1958-72) drainage division average.

SNOW DATA TO JUNE 1, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	5/12	93	40.5	52.8	41.5
Baree Midway	15B16	4600	5/12	57	24.2	35.1	25.0
Baree Trail	15B15	3800	5/12	0	0.0	0.0	0.0
Hoodoo Basin	15C10	6000	5/15	93	44.9	67.0	50.5
			5/30	54	29.9	51.1	39.0
Hoodoo Creek	15C01	5900	5/15	88	41.6	60.5	46.2
			5/30	52	27.6	49.4	36.5
Lookout	15B02	5250	5/16	54	25.6	32.2	30.9
			6/1	4	2.4	18.2	15.0
Nelson	2D04-Can	3050	5/12	1	0.6	4.8	1.1*
			5/31	0	0.0	0.0	0.0*
Schweitzer Bowl	16A06	4500	5/31	0	0.0	9.3	-
Schweitzer Ridge	16A05	6100	5/31	55	30.6	41.8	-
KETTLE RIVER							
Big White Mountain	2E03-Can	5500	5/15	56	24.8	22.2	17.2*
			6/1	17	8.8	11.6	9.8*
Graystoke Lake	2F04-Can	5950	5/13	40	17.3	20.6	19.8*
			5/31	17	8.3	-	15.1*
Monashee Pass	2E01-Can	4500	5/30	0	0.0	4.9	2.0*
SPOKANE RIVER							
Granite Peak	15B13A	6000	5/31	59	24.6	35.8	31.5
Lookout	15B02	5250	5/16	54	25.6	32.2	30.9
			6/1	4	2.4	18.2	15.0
Lost Lake	15B14A	6000	5/31	81	36.0	49.6	46.4
OKANOGAN RIVER							
Blackwall Mountain	2G03-Can	6250	5/12	66	31.9	36.7	34.8*
			5/30	32	17.4	-	27.2*
Bouleau Lake	2F21-Can	4580	5/30	0	0.0	-	1.5*
Brenda Mine	2F18-Can	4800	5/30	0	0.0	0.0	0.0*
Brookmere	1C01-Can	3200	5/15	0	0.0	3.2	1.8*
Enderby	1F04-Can	6250	5/16	102	50.6	55.9	43.7*
			5/30	77	42.0	52.2	39.3*
Grayback Res.	2F08-Can	5225	5/13	22	8.3	-	5.2*
			5/31	0	0.0	1.0	0.9*
Graystoke Lake	2F04-Can	5950	5/13	40	17.3	20.6	19.8*
			5/31	17	8.3	14.3	15.1*
Harts Pass	20A05A	6500	5/26	77	40.0	33.1	-
Hamilton Hill	2G06-Can	4900	5/12	5	2.0	11.3	6.1*

\# Average based on 1963-77 period
* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO JUNE 1, 1983 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
OKANOGAN RIVER (Cont.)							
Isintok Lake	2F11-Can	5510	5/14	7	2.4	6.8	4.3*
			5/30	0	0.0	-	3.7*
Lost Horse Mountain	2G04-Can	6300	6/1	2	0.8	6.0	4.1*
Missezula Mountain	2G05-Can	5100	5/13	0	0.0	5.9	2.4*
Mission Creek	2F05-Can	6000	5/13	57	24.4	24.8	19.1*
			5/31	24	13.1	14.7	12.2*
Monashee Pass	2E01-Can	4500	5/30	0	0.0	4.9	2.0*
Mount Kobau	2F12-Can	5950	5/29	29	13.8	11.4	4.1*
Silver Star Mountain	2F10-Can	6050	5/15	69	34.6	36.9	25.7*
			5/29	40	21.8	27.9	16.5*
Summerland Reservoir	2F02-Can	4200	5/14	2	0.6	5.6	2.4*
Trout Creek	2F01-Can	4700	5/13	0	0.0	2.7	1.7*
Vaseux Creek	2F20-Can	4600	5/12	9	3.1	1.4	0.3*
White Rocks Mtn.	2F09-Can	6000	5/13	56	26.0	23.9	17.7*
			5/30	20	10.7	9.6	10.1*
METHOW RIVER							
Harts Pass	20A05A	6500	5/26	77	40.0	33.1	-
CHELAN LAKE BASIN							
Little Meadows +	20A24a	5275	5/27	0	0.0	55.9	-
Lyman Lake +	20A23A	5900	5/27	90	40.5	74.2	-
Park Creek Ridge	20A12A	4600	5/27	0	0.0	46.0	-
Rainy Pass	20A09	4780	5/26	43	19.4	36.2	-
ENTIAT RIVER							
Blue Creek G.S.	20B28a	5425		Not Measured		30.2	26.4
Entiat Meadows +	20A33a	4540	6/6	12	6.6	15.1	27.7
Fox Camp +	20A36a	6510	6/6	62	35.8	64.5	56.6
Pope Ridge	20B20	3540	6/1	0	0.0	-	-
Pugh Ridge +	20A32a	6725	6/6	13	7.2	28.7	27.1
Shady Pass	20A37	6200	6/1	16	8.8	24.3	17.1
Snow Brushy +	20A35a	3910	6/6	0	0.0	10.6	10.5
Tommy Creek +	20B21a	4900	6/6	0	0.0	3.0	3.0
WENATCHEE RIVER							
Lyman Lake	20A23A	5900	5/27	90	40.5	74.2	-
Stevens Pass	21B01	4070	5/31	22	11.4	41.1	40.6
Stevens Pass Sand Shed	21B45	3700	5/31	0	0.0	18.3	18.7
YAKIMA RIVER							
Bumping Lake	21C08	3450	5/15	Not Measured		0.0	3.6
Bumping Lake New	21C36	3400	5/15	Not Measured		4.1	11.8
Stampede Pass	21B10	3860	5/16	28	16.6	59.6	41.7
			5/26	0	0.0	26.4	26.9
White Pass (E. Side)	21C28	4500	5/15	Not Measured		25.5	29.1

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SNOW DATA TO JUNE 1, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
PUGET SOUND DRAINAGE							
GREEN RIVER							
Stampede Pass	21B10	3860	5/16	28	16.6	59.6	41.7
			5/26	0	0.0	26.4	26.9
SKYKOMISH RIVER							
Stevens Pass	21B01	4070	5/31	22	11.4	41.1	40.6
Stevens Pass Sand Shed	21B45	3700	5/31	0	0.0	18.3	18.7
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	5/26	0	0.0		
Beaver Pass	21A01	3680	5/27	29	14.0		
Brown Top Ridge	21A28a	6000	5/26	98	45.0		
Devils Park	20A04	5900	5/26	70	31.8		
Freezeout Creek Trail	20A01	3500	5/26	0	0.0		
Freezeout Meadows New	20A38	5000	5/26	44	23.7		
Granite Creek	21A29A	3500	5/26	0	0.0		
Harts Pass	20A05A	6500	5/26	77	40.0		
Lyman Lake	20A23A	5900	5/27	90	40.5		
Meadow Cabins	20A08	1900	5/26	0	0.0		
New Hozomeen Lake	21A30	2800	5/26	0	0.0		
Rainy Pass	20A09	4780	5/26	43	19.4		
Thunder Basin	20A07	4200	5/27	22	10.0		
BAKER RIVER							
Dock Butte	21A11A	3800	5/27	85	47.0	69.0	57.2
Easy Pass	21A07A	5200	5/27	118	65.0	101.0	75.8
Jasper Pass	21A06A	5400	5/27	152	84.0	-	85.6
Marten Lake	21A09A	3600	5/27	102	56.0	87.0	68.9
Mount Blum	21A18a	5800	5/27	120	66.0	84.0	72.1
Rocky Creek	21A12A	2100	5/27	0	0.0	6.0	2.2
Schreibers Meadow	21A10A	3400	5/27	32	17.0	54.0	46.3
S. F. Thunder Creek	21A14A	2200	5/27	0	0.0	-	-
Watson Lakes	21A08A	4500	5/27	95	52.0	70.0	62.6

Average for 1963-77 period

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SNOTEL READINGS, 1983 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Average †
PEND OREILLE RIVER							
Bunchgrass Meadow	17A01	5000	5/17		36.3		
			6/1		12.5		
OKANOGAN RIVER & METHOW RIVER							
Harts Pass	20A05	6500	5/15		49.1		
			6/1		31.4		
		GT	5/26	67	35.3 (41.9)		
Salmon Meadow	19A02	4500	5/15		4.0		
			6/1		0.0		
CHELAN LAKE BASIN							
Lyman Lake	20A23	5900	5/15		59.1		
			6/1		35.5		
Mirror Lake	20A39	5600	5/15		-		
			6/1		-		
Park Creek Ridge	20A12	4600	5/15		-		
			6/1		-		
Rainy Pass	20A09	4780	5/15		35.6		
			6/1		20.2		
		GT	5/27	45	21.2 (26.2)		
ENTIAT RIVER							
Pope Ridge	20B20	3450	5/15		0.0		
			6/1		0.0		
WENATCHEE RIVER							
Blewett Pass	20B02	4270	5/15		-		
			6/1		-		
Lyman Lake	20A23	5900	5/15		59.1		
			6/1		35.5		
Stevens Pass	21B01	4070	5/15		9.2		
			6/1		0.0		
Trough # 2	20B25	5310	5/15		11.0		
			6/1		0.0		

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth measurement is SNOTEL reading on same date.

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SNOTEL READINGS, 1983 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
COLOCKUM CREEK							
Trough # 2	20B25	5310	5/15		11.0		
			6/1		0.0		
STEMILT CREEK							
Upper Wheeler	20B07	4400	5/15		5.8		
			6/1		1.3		
YAKIMA RIVER							
Big Boulder Creek	21B09	3200	5/15		0.2		
			6/1		0.0		
Bumping Ridge	21C38	4600	5/15		-		
			6/1		-		
Corral Pass	21B13	6000	5/17		10.1		
			6/1		0.3		
		GT	5/27	62	29.3	(5.3)	
Fish Lake	21B04	3371	5/14		28.3		
			6/1		-		
Green Lake	21C10	6000	5/15		32.2		
			6/1		11.8		
Grouse Camp	20B11	5385	5/15		23.2		
			6/1		-		
Morse Lake	21C17	5400	5/15		80.5		
			6/1		14.9		
		GT	5/27	105	51.4	(44.4)	
White Pass (E.S.)	21C28	4500	5/15		16.6		
			6/1		0.3		
AHTANUM CREEK							
Green Lake	21C10	6000	5/15		32.2		
			6/1		11.8		
TOUCHET RIVER							
Touchet # 2	17C55	5530	5/15		28.8		
			6/1		0.2		

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth measurement is SNOTEL reading on same date.

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SNOTEL READINGS, 1983 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average +
LEWIS RIVER							
June Lake	22C09	3200	5/15		-		
			6/1		-		
Lone Pine Shelter	21C26	3800	5/15		39.6		
			6/1		20.4		
Plains of Abraham	22C01	4400	5/15		-		
			6/1		-		
Sheep Canyon	22C10	4050	5/15		-		
			6/1		-		
Spencer Meadow	21C20	3400	5/15		-		
			6/1		-		
Surprise Lakes	21C13	4250	5/15		44.9		
			6/1		16.7		
COWLITZ RIVER							
Pigtail Peak	21C33	5900	5/15		46.6		
			6/1		26.3		
Potato Hill	21C14	4500	5/15		-		
			6/1		-		
Sheep Canyon	22C10	4050	5/15		-		
			6/1		-		
Strawberry Landing	22C08	3280	5/15		36.3		
			6/1		-		
NISQUALLY RIVER							
Paradise Park	21C35	5500	5/15		-		
			6/1		-		
WHITE RIVER							
Corral Pass	21B13	6000	5/15		10.1		
			6/1		0.3		
		GT	5/27	62	29.3	(5.3)	
Morse Lake	21C17	5400	5/15		80.5		
			6/1		14.9		
		GT	5/27	105	51.4	(44.4)	

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth measurement is SNOTEL reading on same date.

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SNOTEL READINGS, 1983 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average †
GREEN RIVER							
Cougar Mountain	21B42	3200	5/15		0.0		
			6/1		0.0		
		GT	5/27	0	0.0		
Stampede Pass	21B10	3860	5/15		24.3		
			6/1		0.4		
SNOQUALMIE RIVER							
Olallie Meadows East	21B55	3960	5/15		41.3		
			6/1		17.1		
		GT	5/27	49	23.8 (27.2)		

GT = Ground Truth measurement at SNOTEL site
NOTE: () following Ground Truth measurement is SNOTEL reading on same date.

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